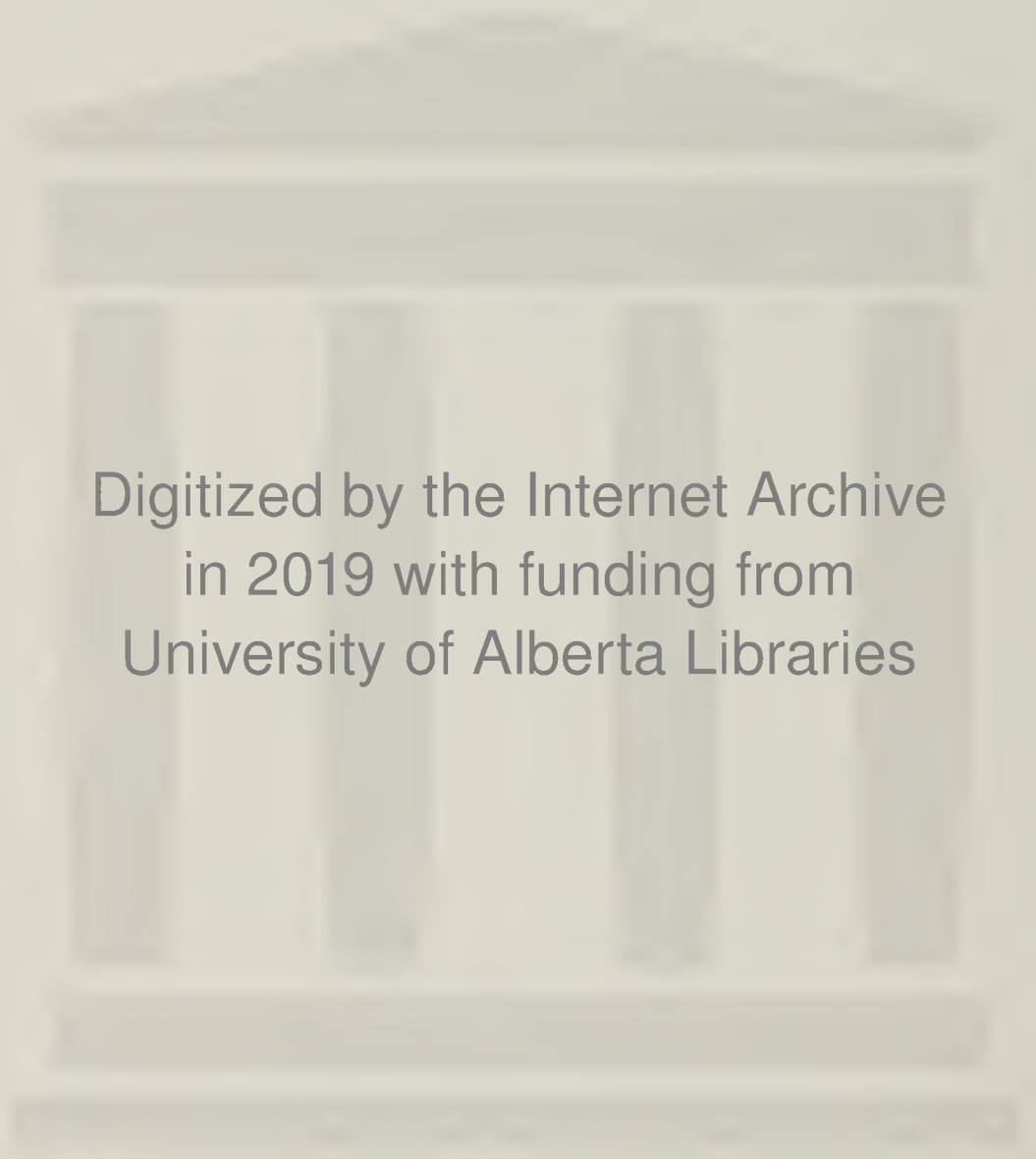

The BLUE JAY

A JOURNAL OF NATURAL HISTORY AND CONSERVATION
FOR SASKATCHEWAN AND ADJACENT REGIONS

Vol. XXVI, No. 4 Regina, Saskatchewan December, 1968

ed Squirrel

Photo by Harold Hosford

Published quarterly by the
SASKATCHEWAN NATURAL HISTORY SOCIETY
Regina, Saskatchewan

PRESERVING WILDLIFE AND NATURAL AREAS

This *Blue Jay* has three articles telling how conservation problems ar being tackled in the United States and India and here in Canada.

There are also three letters especially concerned with conservation — Dot Wade revisits the wonderful Wascana Marsh in Regina; Ernie Kuyt tell of legislation to preserve unspoiled woodlands at Fort Smith; Herb Mouldin urges Saskatchewan to be the first province to protect non-game as well a game species.

Having such problems in mind I was encouraged to find, on a recent visi to Toronto, that damage may be repaired and that "true conservation" on a very impressive scale may take place even where the human population i increasing explosively. Toronto is a big city containing nearly one-tenth o all the people of Canada, more than twice the number living in all Saskatche wan. I knew that urban sprawl on such a scale was destroying natural areas including the beautiful Don Valley described by E. T. Seton in his *Two Little Savages*. Mr. C. Sauriol, of the Metropolitan Toronto and Region Conservation Authority and of the Nature Conservancy of Canada took me on a quick tour of some of the conservation projects which are now restoring nature and natural beauty to much of Toronto.

The Authority was established in 1957 to conserve the renewable natural resources in a thousand square miles of the watershed of several rivers which pour down through the centre of Toronto. The plan required the purchasing of expensive property and the building of control dams and of concrete channels where property was too expensive to acquire as flood plains. In ten years 40 million dollars have been spent. Floods are controlled by an impressive telemetering of stream flow and precipitation data. Accompanying the flood control work is reforestation of important watershed areas, land use management, fish and wildlife management and conservation education programmes and recreation. Not all areas needed for reforestation could be acquired but this difficulty was largely overcome by encouragement of reforestation and some 5,000,000 trees have been planted on private land. Shrubs have also been planted and nest boxes for wood ducks and bluebirds have been erected.

Seven of the conservation areas have nature trails and it is said "many areas have been completely restored to their original pristine beauty and naturalness". The picnicking facilities have been much appreciated and some areas immediately came under heavy use. Over one million people have visited the 12 recreation areas. The success of the project has been greatly increased by many handsome donations of expensive property. For example, Robert and Signe McMichael gave their home, a 40-acre property along the Humber, and their unique collection of Canadian art which is now visited by as many as 1700 persons on a single Sunday afternoon. This spring the Foundation demonstrated modern and old-time methods of sap collecting and maple syrup making. It was educational and highly successful with over 24,000 visitors.

In Albion Hills there is a conservation school which can accommodate 40 students at a time. During the regular school term class groups are taken in for five days of intensive conservation study. The Black Creek Pioneer Village is also educational. Its Dalziel Barn, 1809, is the oldest building but others including a Halfway House and a grist mill have been carefully restored. People in the village are dressed in pre-Confederation type clothing. It seems an unusual side development for the conservation project, but how very important it is to give our young an appreciation of our past and of our original environment for without interest and understanding they will see little need for conservation and for thought of the future.

George F. Ledingham

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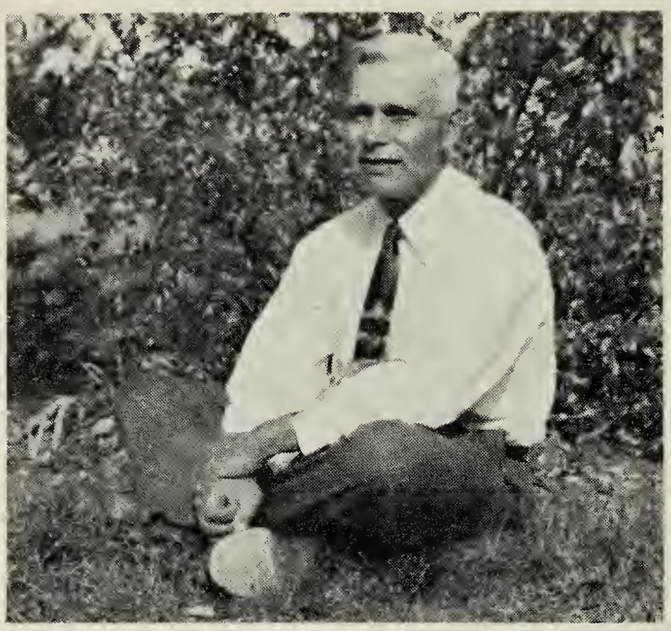
IN MEMORIAM: STEPHEN MANN (1895-1968)



Steve Mann was born in the ranching country at Skull Creek in 1895, and died there in August, 1968. Over the years, when the Mann home was a kind of crossroads for the community, Steve Mann became known for the open heart and mind that characterize the people of the High Plains.

Steve Mann was beloved by his own Skull Creek community and by the wide circle of friends in the Saskatchewan Natural History Society with whom he shared his love of the outdoors and his observations of nature. At the suggestion of the Mann family, the Reverend G. E. Smith has sent us for publication the tribute he paid Mr. Mann at the funeral service.

An Appreciation

As a boy Stephen Mann was usually on hand with members of the family to welcome the Anglican priest on his annual visit to the ranch. In the early part of this century the clergyman rode on horseback, calling in at many ranches and farms between Medicine Hat and Fort Qu'Appelle. There were baptisms and marriages and many an earnest conversation during those sojourns. He told me about the services in that old log house which later became the oldest active post office in Saskatchewan. In fine weather the family and their neighbours might take part in an outdoor service on the grass close to the house. A small organ was used.

The active interest in the Christian Church continued throughout the life of Stephen Mann. The ranch was sometimes visited by the scarlet-jacketed men of The North-West Mounted Police as they rode across the Skull Creek country to and from Maple Creek. At first, the nearest religious services were in the small church at Piapot, which was visited by the family when weather was fine and transportation available. Some years later services began at Mannville Schoolhouse, close to the ranch, Mannville becoming a part of the Maple Creek and Gull Lake parishes. These services were continued until August, 1968. Steve Mann was rarely ever absent from church and he served for some years as Warden and Treasurer of his congregation. I sometimes referred to him affectionately as the "head man"!

In order to appreciate the very full life and witness of this dear man one ought to think of him in the light of that part of Saint Matthew's Gospel recorded in Chapter 6:24-34. These lines help us to comprehend something of the beautiful simplicity of his life on the prairie. Many of his old friends within The Saskatchewan Natural History Society have seen how deeply he loved people, and all the creatures of God's Creation.

"Look at the birds of the air; they do not sow and reap and store in barns, yet our heavenly Father feeds them.

"Consider how the lilies grow in the fields; they do not work, they do not spin; and yet, I tell you, even Solomon in all his splendour was not attired like one of these."

His was from the early years a life closely influenced by the Good Shepherd. Stephen believed that for the Christian, death is not a tragedy, but a triumphant entrance into a fuller life. As the members of his family and his friends continue to lend their wholehearted support to this Society, they will surely remember with very great joy this lover of God.—*The Reverend G. E. Smith*, Hodgeville, Saskatchewan.

TRUE CONSERVATION

by **Thomas A. Gwynn,** Knife River Coal Mining Co., Bismarck, N.D.

The mining industry finds itself in this year, 1968, caught in the interesting dilemma of meeting increased demands for energy fuels while at the same time trying to satisfy an aroused public interest in that loosely used term "conservation." In this short article I cannot solve the problems of conservation nor of reclamation for this industry, particularly in Canada, but I can present a few thoughts to help keep our thinking straight on the subject as well as a few reflections on what is being done in areas of the United States.

In a questionnaire passed out to a cross-section of citizens in the eastern United States it became apparent that many people do not understand the need for or the real use of lignite or other low grade coals in our modern civilization. So many today are taking for granted, and even demanding, the increased comforts and conveniences of low cost power available at the flick of a switch, never stopping to realize that this convenience is largely dependent on our huge deposits of low grade fuels. So many today glibly cry for "conservation" when pointing at areas that have been mined, without realizing that this word is in actuality a two-edged sword, and must apply not only to conservation of the land, air, water and soil during and after mining, but also conservation of the mineral resources underlying the surface.

And so, before delving into the problem of conserving or reclaiming the surface, we must recognize that any law requiring reclamation which proves burdensome to the point where deposits of lignite or coal can no longer be economically mined results in waste of a valuable resource and is in itself defeating the purpose of conservation. Thus we become faced with a difficult and delicate job of balancing values, mineral deposits as compared to the value of the surface. Thus conservation on our mined lands must be approached with great care and objectiveness, devoid of emotionalism and bias.

Certainly we have been blessed with a beautiful land in North America and it is the desire of all thinking persons to maintain the cleanliness of our air as well as the beauty of our forests, lakes, and farmlands. But these resources have been given to man for his wise use. Any thinking person or company necessarily must look to the future and attempt to conserve the values of these lands. Many of the states in the United States, contrary to the emotional cries of the uninformed or malicious, can boast that up to 80% or 90% of the mined lands have been reclaimed. Methods of reclamation have varied with improved technology over the years and in accordance with the highest potential use of the lands. In some areas adjacent to the population centres where land prices are high, mined areas have become extremely valuable suburban country club and housing developments with rolling home sites resting on the edge of blue, fish-filled waterways. Or they have become valuable industrial sites. Elsewhere mined lands have been reclaimed to highly productive orchards, farmlands and pastures. Heavy forests with timber as an economic product have resulted from the reclamation of other mined areas. And not to be overlooked in the reclamation of such areas is the resource being sought after more with each succeeding generation — recreation.

I have travelled through mined areas in Pennsylvania, West Virginia, Ohio, Indiana, Illinois, North Dakota, South Dakota, Montana, Wyoming, Saskatchewan, and Alberta and have seen all extremes of mining problems and reclamation problems. I have travelled from areas of long growing seasons with plentiful moisture to the arid lands of Wyoming and eastern

Water-filled spoil bank depression surrounded by yellow clover, grasses and weeds in strip mining area in North Dakota.

Montana. I have observed high toxic conditions in some of the eastern states, a condition that is virtually unknown in the high plains of the Dakotas and Canada, and the conclusion obviously reached is that each area must be considered in accordance with its own individual problems as to climate, soil condition, land value and economics. For this reason it would be presumptuous for me or any other person to blueprint a reclamation program for Saskatchewan without first spending considerable time in studying its conditions.

Suffice it to say that a thinking industry concerned with the welfare of the community and province will look for an answer. We feel that in North Dakota, an area not too different from Saskatchewan, we have found some good answers. Reclamation efforts have varied from company to company with varying results but it has been demonstrated clearly that given time the mined areas can be made to produce. When dealing with a low cost fuel like lignite it has proven unrealistic to think in terms of complete leveling of the "spoils" in most areas and, where the soil is heavy clay, this has even been found to be detrimental. Partial leveling is however warranted in some cases and in the low population areas with low land values these mined lands are being turned into grazing lands, game management areas and recreation centres.

With our light rainfall and short growing season reclamation takes years to accomplish. The tremendous length of time which we know it takes to develop an inch of topsoil indicates the patience that is needed for any type of reclamation. The Illinois reclamation law is perhaps the most progressive of any state in the United States; there the mining operators are required to present a plan of reclamation to the state, which plan is subsequently approved, with the mining company being then responsible for carrying it out. The law calls for no leveling, partial leveling, or complete leveling, depending on the highest potential use of the land and what can be accomplished by it. This law does not impose upon the operator the expense of leveling lands that cannot be productive if they are in an area where there is low population or low land value. On the other hand, where conditions warrant, complete restoration of the land may be required. And, of course, regardless of the ultimate use of the lands, toxic and waste materials must be buried.

The success of the Illinois law is evidenced by the high percentage of lands in that state that have been reclaimed to new uses, and the Illinois law has been used as a pattern by other states.

In 1968 the coal companies surface mining in North Dakota submitted to the legislature a bill dealing with reclamation of lignite spoils banks in the state. Essentially this was the Illinois bill which was modified slightly to fit the needs of North Dakota. In this modification, treatment of gob piles, slurry and acid wastes were eliminated because these problems are non-existent in North Dakota. The bill requires a company to post a bond and obtain a licence from the state before mining an area. The bond is held to pay for reclamation work if the company defaults its responsibilities. Only after mining and satisfactory reclamation of the area has been completed is this bond released. In any event all land within 660 feet of any public road must be graded to a rolling topography having no more than a 25% grade. The tops must be "struck" from non-graded land and access roads must be built approximately every 2,000 feet. A reclamation plan acceptable to the Department must be submitted the first year after the permit term. This plan is based on the advice of people knowledgeable in reclamation, such as foresters and agronomists. The ultimate aim is to return land to the highest potential future use.

The lignite industry is growing and will continue to grow in the years to come. At our present rate of growth those of us alive 30 years from now will see a population density approximately double that of today. The increased housing, industry, power requirements, and other needs of such a burgeoning society demand that our conception of conservation consider the need for all of our rich mineral resources, including the valuable lignite and sub-bituminous coal deposits on the high plains of North Dakota and Saskatchewan. Consumption of coal for production of power

General view of older North Dakota strip mining reclaimed spoil banks with cover of clover, deltoid poplar and ponderosa pine.

is expected to double in North America during the next 15 years. And now the industry is looking to our low grade coal deposits as a potential source of our oil needs of tomorrow.

It becomes evident when we contemplate these facts that the time is here now for an increasing awareness by the coal industry and by the citizens of North America concerning our respective needs and problems. We can no longer live in an isolated world of our own concerned on the one hand about how much coal can be mined or concerned on the other hand about maintaining the pristine nature of our countryside. We must recognize that the ecology of the particular locality we live in demands intelligent consideration. Emotional and unrealistic thinking must give way to careful planning by groups including experts in all related fields as well as the mining industry in order to establish a sensible approach to reclamation with full recognition of relative values and economics. Certainly the reclamation of mined lands must in the future be considered a cost-sharing program with not only the mining company, but all others who benefit from this resource, sharing in the cost of reclamation.

Only by such an intelligent and cooperative approach will the problem of reclamation of mined lands to their highest potential use be solved, and the mining company permitted at the same time to recover the ever-increasing tonnage of coal needed to maintain the benefits you and I demand in our modern society.

POLLUTION AND THE NORTH SASKATCHEWAN RIVER

by **Beattie Martin,** CBC, Regina

EDITOR'S NOTE: So little information is available to the public about the extent of water pollution in our rivers, and what is being done to control it, that we thought our readers would be interested in this broadcast given by Mr. Martin on Sports Week, a CBC western regional radio programme, October 21, 1968. We should ask ourselves whether public agencies are actually doing enough to control pollution.

"Growing pollution of our waterways is a threat not only to our fish and wildlife, but to all outdoor recreation involving water and, indeed, to the very health and welfare of neighboring communities."

This is a quote from a Remington Newsletter statement made by Mr. Bud Goodwin representing the Lions of Michigan. They had every reason to be concerned because pollution has reached the critical level in the Great Lakes area, and is becoming a problem along our oceanic shoreline. We on the prairies have been fortunate in that water pollution hasn't been a serious problem here. We can benefit from the unfortunate experiences of other communities. We are not an industrial area, thus we don't produce effluents which would pollute the water or air on a large scale. I'm sure there has been some pollution but it hasn't been of major concern, at least the public hasn't been aware of it. It is interesting to note that the North Saskatchewan has been used for sewage for many years by cities along the river. The new pulp mill at Prince Albert must first purify the water from the river before running it through its plant. The entire operation depends on the quality of the water.

The development of the Prince Albert Pulp Mill has caused concern because of the threat of pollution. There is the possibility that effluents from the mill could pollute the river, and based on the production potential of the mill, these effluents, if not controlled, could affect a large area along the North Saskatchewan River. It has been estimated that 72 miles of the river could be affected, an area which produces pike, pickerel, goldeye and sturgeon for sport and commercial

fishing; the Tobin Lake area, a commercial fishing lake for goldeye and a waterfowl producing area; the Cumberland Lake and River system, 62,000 acres of highly productive muskrat marsh and a waterfowl area. These are the areas that could be adversely affected if the effluents produced by the pulp mill are not controlled.

What are the effluents in question? For the answer I asked Omar Ashem, the technical control supervisor for the Prince Albert Pulp Mill. He told me:

"There are three main types of wastes in a pulp mill such as this one: there are neutral wastes, acid wastes and alkaline wastes. These are kept separate in the mill until they are brought together in the proper type of equipment where they're mixed together and neutralize each other. This has to be properly done just before settling so that best results can be obtained." By name the three toxic chemicals are methyl mercaptan, rosen acids and sulphides.

In the initial stages of negotiations for the pulp mill, the Saskatchewan Government considered the pollution possibilities and conferred with various branches of the government that have an interest in the Saskatchewan River and related resources. These would include Natural Resources, Fisheries, Wildlife, Industry and Commerce, Water Resources, Public Health, etc., and these departments are satisfied, at least as far as I can determine, that pollution will not be a problem if pollution controls are used. There will be some effluents poured into the river, but the Water Resources Commission and the Department of Public Health feel that the natural flow of the river will handle these effectively. The main danger is in the first 40 miles.

The Government set three conditions for pollution control:

1. That the B.O.D. (biological oxygen demand) not exceed 50,000 pounds a day.

2. That from 1969 to 1973 the B.O.D. shall not exceed 40,000 pounds a day.

3. That the total suspended solids shall not exceed 10,000 pounds a day.

When I asked Omar Ashem what steps would be taken by the Company to control pollution, he said: "The Prince Albert Pulp Company sewage treatment plant is designed to take out solid material from the wastes before they are discharged into the River. The first step is that the various liquid wastes are mixed together so that they neutralize each other. They then pass into two settling basins where the solid particles settle to the bottom. The clear liquid sewage then drains to a dispersion pipe which mixes it evenly into the river water. This way an even dilution in the river is achieved."

The Company has agreed that if the Government is not satisfied with the pollution control it must proceed with a secondary control measure which would cost an additional one and one-half million dollars. The Government feels that at this time this step is not necessary and the first tests taken by the plant indicate that there is a very high level of efficiency in removing the solids. However, tests will be taken during the first five years of operation to determine pollution and if it is felt that there is a danger to other users of the river, the Company has agreed to proceed with the additional control measure.

I think we must be realistic in that we must live with some pollution if we are going to develop the industries in the province, like pulp and potash. However, despite the positive advantages such as employment, development, increased revenue, etc., it is equally important to remember that other industries, such as commercial fishing, trapping, recreation and waterfowl production, could be endangered if the effluents from the pulp mill, or other industries are left unchecked.

Water pollution is a subject that concerns, or should concern all of us. We are fortunate that we can benefit from the experience of other communities where water pollution has gone unchecked. We must be certain that it doesn't happen here.

WILD LIFE IN INDIA

by **Jagdish Aggarwal**, Regina

Photo, 1965, Lucy H. Murray

India's Keoladeo Ghana bird sanctuary. For more details of this sanctuary see the Bruce S. Wright article in *Canadian Audubon*, May-June, 1968.

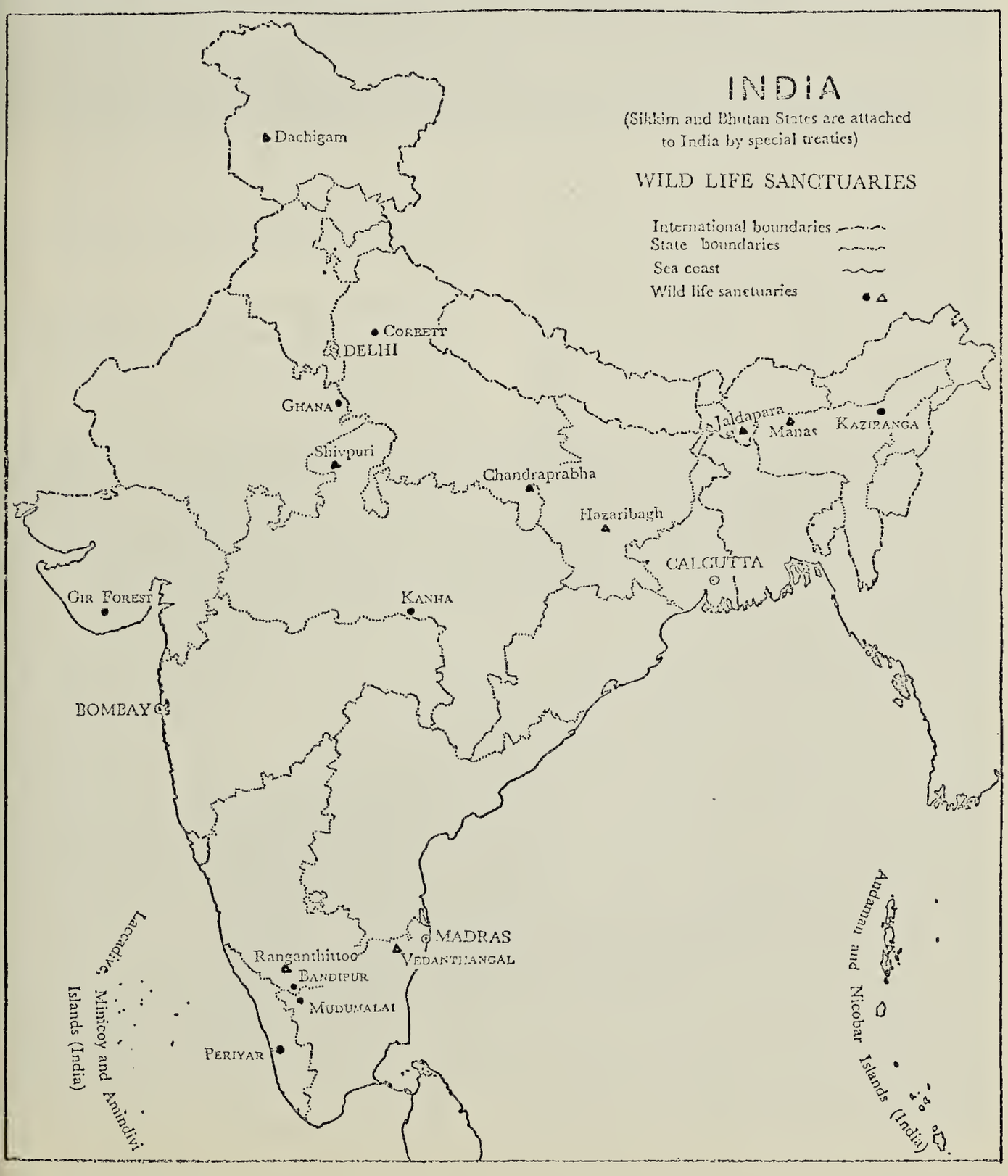
Nature has lavishly bestowed on Indian soil a luxuriant wild life. Indeed India is one of the few countries on the globe to possess such an abundance and variety of animal life; the diversity of this great country is reflected in its varied fauna. But this abundant fauna, scattered over the length and breadth of the country from the snow-clad peaks of the Himalayas to the cloudy waters of Cape Comorin on one side and from Jaisalmer to Kohima on the other, has received not only a wilful neglect but also an unfair treatment, resulting in the fast depletion of India's animal resources.

In the country in which the teaching of non-violence by Buddhism and Jainism flourished and where Gandhi and Ashoka exhorted people to treat animals humanely, many Maharajas and Nawabs—the rulers of small states in pre-independent India—vied with each other in the wanton destruction of wild life. British civil servants offered rewards for the elimination of flying foxes and monkeys in Kangara District (Himachal Pradesh) and wild boars and nilgai in Gurgaon District (Haryana).

Rapid increase in human population and consequent pressure on food and living space caused spectacular changes in the physical condition of the environment, and the replacement of forests by arable land like that of the Dandakaranya Project, and of fields by human abodes, reduced the area for the free movement of the wild animals. "Grow more food" campaigns were by and large misinterpreted by farmers who used insecticides and other poisons not only for stray pigs, mad dogs, rogue elephants and child-lifting hyaenas but indiscriminately for other harmless and innocent wild animals. Wild life main-

tenance was also affected by the pollution of soil or water.

The crocodile which once upon a time was fairly generally distributed in the tanks and rivers throughout India is now represented by only a few survivors like those in Pushkar Lake near Ajmer (Rajasthan). The feverish search for their skin, like the search for the feathers of the Passenger Pigeon, speedily decreased their numbers. The 25 tigers of the erstwhile Wankaner State (as estimated in 1947) have now been completely wiped out. The number of tigers has become appreciably low along the Aravelli ranges, and the Indian cheetah—the hunting leopard—has probably ceased to be. The deer, pig, antelope and gazelle in Madhya Pradesh have surrendered to the flashlights and machine guns. Cheetal and bark deer have been tamed and imprisoned in the National Parks to remind visitors of the heavy toll taken of them by man. The musk deer of Himachal Pradesh have largely been ensnared and voraciously devoured. Herds of deer have become a rare sight in Mohindergarh District, as has



Government of India photo

Rhinocesos at Kaziranga Sanctuary (Assam).

the Kashmir stag, and the brew antler deer is confined to the eastern part of the country. The wild bear of Gujrat. Golden Eagle, Indian wild ass, snow leopard and Indian Bustard are being forced into the groups of extinct animals. The same fate has perhaps befallen to the Bearded Duck and pigmy hog. Rhinoceros, too, would have been exterminated but for the special protection afforded to them. The majestic lions, which used to be common in North India and numbered 250 in 1955, are now restricted to the Gir Forests of Gujrat State. A small part of the total number of black-and-white coated spiral horned black buck remain and if appropriate measures for its perpetuation and protection are not taken it may, too, quite soon become as dead as the dodo.

Fortunately 70 sanctuaries sprawling all over India and covering an area of approximately 50,000 kilometers are contributing to the preservation of Indian wild life. Apart from the Gir Forests, where the Indian lion is found and raised the best known among them are Kaziranga, Manes, sonai rupai, Orang Reserve, Lakhow Reserve in Assam state and Jaladpara in Bengal, which are restoring the world-known Indian one-horned rhinoceros.

Assam sanctuaries in collaboration with the sanctuaries like Madumalai (Madras), Periyar (Kerala), Jaladpara (Bengal) and the sanctuaries of Utter Pradesh are providing refuge to the Indian wild elephant. Wild buffaloes and Indian bison (gaur) are protected in the sanctuaries of Assam, Madumalai and Periyar. Deer are preserved in Dachigam, Rajpari, Chununai (Jammu and Kashmir) and other north Indian sanctuaries. The rare animals like brow-antlered deer and the banting or Tsaine are getting special attention in Keibal sanctuary in Manipur.

The avian fauna is preserved in sanctuaries like Keoladeo Ghana (Rajasthan), Vedathngal (Madras), Serinagapatam and Ranganthittoo (Mysore), and Bhupender Sagar near Patiala (Punjab).

There is a fish sanctuary near Ram Nath Pur in Mysore state.

In addition to these sanctuaries, there are about 20 zoological gardens and many museums in the various states of India where we can observe and admire wild life.

Wild life is of cultural, economic and scientific value and plays a significant role in nature. Within a few decades India has lost nearly three-fourths of her herbivorous and carnivorous wild animals and henceforth the rare specimens of wild life which are on the verge of extinction need more careful protection. The Government of India took a commendable step by issuing a set of commemorative stamps on wild life in 1962 and thus making the public conscious of it. Needless to say, it is time to consider seriously the measures needed for perpetuation of this gift of Nature. The following suggestions are being presented as some of the steps necessary for the encouragement and promotion of wild life in India.

1. A legal halt tc the ruthless hunting of old Moghul day's style either for sport or economic profiting. Hunting by poachers and primitive tribes must also be brought to a complete end.

2. The rare wild animals should be sent to overseas sanctuaries and parks as another step towards their preservation, as was done in the past in the case of the black buck, Indian buffalo, chital, etc.

3. Total restrictions in the trading in and export of rare species and their skin and feathers should be imposed.

4. Intensive studies on wild birds and mammals, ignored so far, should be taken up immediately in order to acquire further knowledge of their life history and ecology.

5. Better game laws should be enacted and the offer of relatively rare animals as *shikars* for tourist attraction may be stopped.

6. Facilities for training and refresher courses for the forest staff involved in the execution of game laws should be increased.

7. Intensive education on the importance of wild life through news media, radio broadcasts, public meetings and display of exhibits and films must be given priority. The public can be urged to preserve vanishing species. Enthusiastic celebration of events such as "Wild Life Week" and inclusion of topics on wild life in the curriculum of school studies will, of course, enlighten the younger generation on the importance of wild life.

Government of India photo

This magnificent asset must be preserved.

PILEATED WOODPECKER NESTS AT GOOD SPIRIT LAKE

by **Joyce Gunn,** Box 549, Yorkton

Pileated Woodpeckers *(Dryoscopus pileatus)* have been seen in this area for the past two years, but not until the spring of 1968 was a definite nesting record established at Good Spirit Lake. In C. Stuart Houston's "Birds of the Yorkton district, Saskatchewan" *(Can. Field-Nat.,* 63:215-41*)*, the Pileated Woodpecker is described as a bird of the northern woods, occurring at Crystal Lake, just north of the area covered by this list; and Houston reports that "J. Gunn noted only two individuals at Good Spirit Lake in sixty years; one of these was seen in autumn of about 1936, the other in the spring of about 1942."

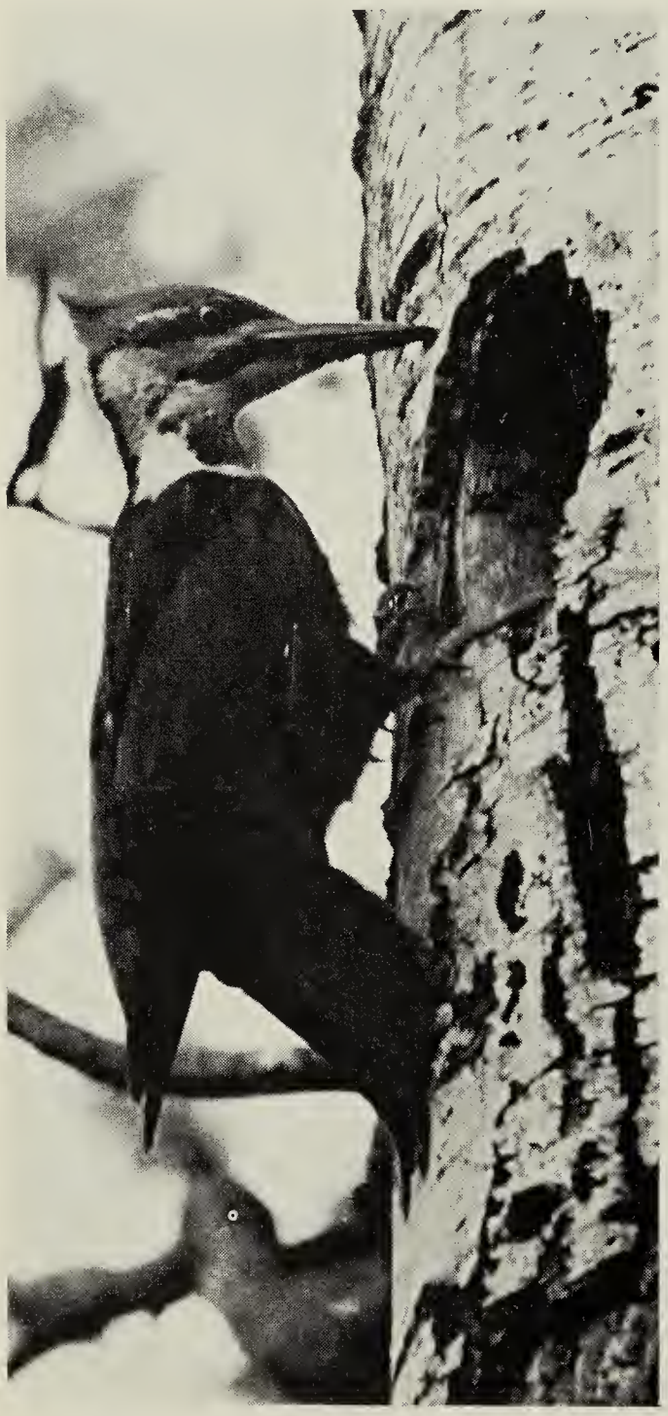


Photo by Larry Morgotch

Pileated Woodpecker at Good Spirit Lake, June, 1968.

My own sightings with a positive identification started here on April 1, 1967 and I heard, and occasionally saw, an individual during that summer and fall. During the early spring of 1968 sightings became more frequent and in March, when the male was most vocal, I was able to locate the general "home" area. There had been a number of possible nesting holes made but the most likely one was found on April 7. It, and the other holes, were located in a large, live poplar on the northwest face of the tree about 18 feet above ground and only about 150 yards from Highway #229 that leads to Good Spirit Provincial Park.

During the next few weeks the site was checked at various times by both Frank Switzer and myself without either of us seeing any sign of nesting. Finally, towards the end of April, I visited the site one morning and heard sounds of a bird working inside the tree and then saw the Pileated Woodpecker poke its head out to watch my dog prowling below. It watched the dog for a few minutes and then withdrew into the tree, out of sight.

From then on, the site was checked various times by Frank Switzer who got a photograph on May 26 of the nesting bird, and later more photographs of the young and parents. Larry Morgotch took the picture shown, in late June. It is not known how many young were raised at this nest but I later saw four Pileated Woodpeckers in a group.

TAPING THE SONG OF THE GOLDEN-WINGED WARBLER

by **Fred G. Bard,** Director
Saskatchewan Museum of Natural History, Regina

Tape recorders have a wide range of uses, but it was quite by accident that I was able to record the unusual Golden-winged Warbler while tape recording bird songs. The story may be of interest to some of our readers.

The Saskatchewan Museum of Natural History has recognized the value of recordings for a good many years and has a fair selection of bird songs. The purpose of gathering the recordings is to add a new dimension to bird study. We began with a MagnaCorder recorder which was an excellent machine for quality, but it was cumbersome for field use. It was operated by two 6-volt car batteries and a converter, all of which had to be carried to the spot; sometimes this was up hill, as when we recorded the Rock Wrens in the Cypress Hills. The MagnaCorder is no longer available and for several years we were without a suitable type of recorder. While there are some excellent ones available, they are very expensive.

The Phillips EL 3302 is battery operated, weighs 3 pounds, 14 ounces, measures $2\frac{1}{2} \times 6\frac{1}{2} \times 8$ inches, including the carrying case. Without going into any of the technical details, it is sufficient to say that its size, convenience and quality make it ideal. A meter indicates the battery strength and it takes but a minute to change the five (flashlight) batteries which operate the recorder. Tapes are cassett loaded and offer 60, 90, and 120 minutes of recording time. They are rapidly changed since there is no threading.

The recorder was purchased by the Museum for taking dictation and numerous other chores, since it can be used anywhere. On one of our field excursions, it was tried on bird songs and the quality was found to be quite amazing. As a result, we began collecting a series of bird calls to build a library of natural sounds in specific environments. They were intended for use on Nature Trails in our Parks. The song season of birds is very short —the really good performance is but two to three weeks long at most, when the birds are on territory and filling the daylight hours with their greatest effort and best songs. In the season just ending we got close to 70 recognizable songs of different species. The next job ahead of us is to edit these in such a way as to be of practical value in giving demonstrations. Included in our collection we have, of course, at present a percentage of songs of different birds recognizable to the trained ear, but quite unsatisfactory for teaching purposes.

June 2, 1968, in Regina was a lovely Sunday, warm and bright; the last of the warbler migrants were going through. Having chores to do around the yard provided me with an opportunity to keep my ear in tune with the bird migrants going by, and to rush to the elms in the front of the house to capture whatever sounds of these travellers I could. When taping sounds one becomes aware of the difficulties in capturing nature's sounds when in competition with man-made noises, especially in the city. Our boulevard is practically a speedway; this, coupled with aeroplanes, stop signs and their "roaring getaways", the many sounds of children, barking dogs, power lawn mowers, etc. tries anyone's patience. Well, to get on with the story, the migrants on this day included Clay-colored and Chipping Sparrows, Tennessee and Yellow Warblers, Red-eyed and Warbling Vireos, Least Flycatcher, Eastern and Western Kingbirds. While capturing the songs of these migrants and the ever-present House Sparrows, I became aware of a call that I could not identify. In five hours I was able to record this call 21 different times. Early in

the evening as the church bells rang, I was able to see the beautiful singer while actually recording its song. It was a male Golden-winged Warbler and visible for at least 30 seconds. The audiospectrogram of the song given on p. 254 of *Birds of North America* (Robbins, Bruun, Zim and Singer, 1966) is identical with the song I recorded—1⅓ seconds duration at a pitch of 4300 to 7500 cycles. Incidentally, on this occasion, I recorded another song which I have not yet been able to identify.

In the fifth edition of the A.O.U. *Check-list of North American birds* (1957) the breeding range of the Golden-winged Warbler is given as southeastern Manitoba, then eastward and southward in North America. The only other record that we have for Saskatchewan is a sight record by a single observer, Frank Brazier, of a bird seen in Regina on May 18, 1962, and reported in the *Blue Jay*, 20: 153-4. Being able to record the song of the bird which I had the good fortune to see and hear on June 2, 1968 adds substantially to the evidence of the occurrence of this species in Saskatchewan.

With the tape recorder one is able to identify birds accurately by making recordings of the singer. One can be as accurate in identification as with specimen records, and much more accurate than many records published from hasty sight records. It is known that some birds imitate others, but as mentioned, when a sufficient sample of the song of the individual bird has been taken this method of identification can be positive. Birds sing with various levels of perfection. Tape recorders can capture the sounds of different environments. This is an excellent way to get acquainted with the birds before the spring migration begins, which is always necessary, even to the experienced ornothologist. The more one becomes familiar with sounds the more one realizes their value and the genuine pleasure that can be had from these records. It is much more personal than seeing, and impresses you more. I hope others will take advantage of the facilities that are available in the use of this type of machine. I'm satisfied that it can be of as much pleasure to the amateur as to the professional, and a good deal cheaper than photography —an equally interesting profession. This recorder is adaptable to a variety of uses. When patch cords are used to playback over a high-fi, the quality and volume are again most surprising. This is one of the simplest operating tape recorders, with amazing quality. I highly recommend it.

THE HARLEQUIN DUCK IN SASKATCHEWAN

by **D. F. Brunton,** Ottawa, Ontario

A Harlequin Duck *(Histrionicus histrionicus)* in the portion of the Prairie Provinces east of the Rockies is a rare occurrence indeed. Godfrey *(Birds of Canada,* 1966*)* cites only five records for this area. However, on a birding trip to Regina, Saskatchewan this fall, I was able to add another record to this list.

On a morning trip around Wascana Lake in Regina on September 6, 1968, I spotted three of these small ducks. The Harlequins were flushed from the reeds on the north side of the lake by the Broad Street bridge. They were exceedingly tame and allowed a close study through 7x50 binoculars at a distance of approximately 35 feet.

At 1:00 p.m. I returned with Mr. F. Brazier of the Saskatchewan Natural History Society and we again spotted the birds; at this time they were asleep, well out in the open water. Soon after, Mr. F. Bard of the Saskatchewan Museum of Natural History came over and we were able to study them closely, to the point where we were entirely satisfied that they were Harlequin Ducks. I was

able to observe them until almost 4:00 p.m. They were not seen after this time.

The birds appeared to be adult males in eclipse plumage. Although they had the characteristic white head spots of the female, the brilliance of the spots was quite different. The small posterior head spot was the brightest; the large spot below the bill was fainter, and the upper bill spot was at times very difficult to see. The birds had a purple wash across the breast and a red-brown coloration on the dark sides. Although they slept most of the day, they did come alive about 2:00 p.m. and were heard to give a series of "Wheet"-like call notes.

There is only one previous record for Harlequin Ducks in Saskatchewan. A mounted male in the Swift Current Collegiate Museum is mentioned in the *Blue Jay*, 16:65, where it is recorded that "several pairs of Harlequin Ducks were reported at the Saskatchewan Landing Ferry. A beautiful male specimen was taken on May 31 (1934) . . ."

Although I have seen Harlequins before, on the coast of British Columbia, they too were in fall plumage. The British Columbia observation helped me in identifying the birds in this instance, but I wish, on aesthetic grounds, that these birds had still been in possession of their spectacular breeding plumage!

EDITOR'S NOTE: After receiving the above note from Mr. Brunton, we were informed of a second and later sighting of a Harlequin Duck in Regina. This later observation was made by Fred Lahrman, Bill Eddie and Lorne Scott of the Saskatchewan Museum of Natural History at the Condie Park on Highway #11 just northwest of the city of Regina on October 10, 1968. Lahrman was close enough to photograph the bird and to note the one distinct white spot behind the eye and the lighter shading at the base of the bill. The bird was again sighted on October 22, and it was shown to me on October 23 by Lorne Scott.—Margaret Belcher.

ADDITIONAL BIRD SPECIES FOR CREE LAKE

by **D. Wayne Davis,** The School of the Ozarks, Point Lookout, Missouri; and **W. Harvey Beck,** Manitoba Museum of Man and Nature, Winnipeg

The Sharp-tailed Grouse *(Pedioecetes phasianellus)* was earlier reported as a hypothetical occasional visitor to Cree Lake (Davis, 1966). During a visit to Cree Lake in June, 1966, we asked trapper Martin Engeman to collect a specimen. Martin saw none during the fall or winter of 1966 but saw and collected a single specimen in late November of 1967. The rather dark-colored specimen was mounted by Miss Doris Montgrant and was donated to the Saskatchewan Museum of Natural History. It was identified as belonging to the subspecies *caurus* by W. Earl Godfrey of the National Museum, Ottawa, who commented that it would be interesting to know how far east *caurus* is found as a breeding bird. The Sharp-tailed Grouse is listed as an uncommon permanent resident of the Lake Athabasca region (Nero, 1963).

On June 25, 1966, we observed a Common Snipe *(Capella gallinago)* winnowing on the west side of Lazy Edward Bay. An Eastern Kingbird *(Tyrannus tyrannus)* was seen nearby. Tree Swallows *(Iridoprocne bicolor)* were seen on both the west and east sides of Lazy Edward Bay. Martin Brustad, who trapped and fished at Cree Lake for many years, said that bluebirds (Mountain Bluebirds?) nested in boxes he had built at his cabin at Stony Narrows. The above species were not reported by Lahrman (1953) or Davis (1966) for Cree Lake although both species occur farther north in the Lake Athabasca region (Nero, 1963).

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PORCUPINE IN FERRUGINOUS HAWK'S NEST

by **Keith Hodson,** 5191 Robertson Road, Ladner, B.C.

Ferruginous Hawks, Oldman River, Alberta Photo by Keith Hodson

During the summer of 1968 I was working under the auspices of the Canadian Wildlife Service as a summer student on a survey of raptorial birds in the prairie provinces, and was fortunate to be able to visit the nesting sites of various species of birds of prey including Prairie Falcons, Pigeon Hawks, Sparrow Hawks, Red-tailed Hawks, Swainson's Hawks, and Ferruginous Hawks. One of the more interesting finds was the remains of a porcupine in a Ferruginous Hawk's nest along the Oldman River, Alberta, and porcupine quills in the young birds.

At the time of our visit the three young were just about ready to fly and one tumbled out of the nest on our appearance. I retrieved this one and John Cambell, who was assisting me, brought the other two down to our boat to be banded; it was then that John noticed what appeared to be a cactus spine in the cere of one. Upon pulling it out with the banding pliers, we discovered that in fact it was a porcupine quill which had already worked its way through the upper mandible into the mouth cavity. Upon close examination of the three birds, we found and removed a total of 24 quills. The following is a list of what was removed from each: female—nine quills (four through balls and joints of feet, one through upper mandible, one through wing butt, two into body in the anal area), first male—six quills (three through feet, one through leg joint, two deep into breast), second male—11 quills (four through balls and joints of feet, two into breast, two into back, three through wing butts). The female bird also had an old eye wound causing the eyelids to grow together, which we carefully cut apart.

Porcupine quills in young Ferruginous Hawk

We at first presumed that a porcupine had wandered into the nest, which was accessible from the top of the cliff, until we returned the young birds to their nest and found the remains of a porcupine in it. This poses a few interesting but unanswered, questions; did the adults actually kill the porcupine in search of food? had the porcupine been attacked and killed in defence of the nest? or had the adults found a dead porcupine and simply carried parts of it away to feed the young? In any case, one can only speculate as to what the condition of the adults is, or was. Other than the swellings where the quills had been pulled from, the young seemed in good shape, and the adults also showed no sign of handicap as they protested our presence at the eyrie.

NEW SIGHTING OF BAND-TAILED PIGEON IN ALBERTA

by **Michael Wilson,** 196 Westover Drive, Calgary

On August 16, 1968, at 4:30 p.m., my mother, Mrs. C. Eric Wilson, and I were walking along Ribbon Creek road in the front range country west of Calgary. We were about a half-mile west of the point where this road meets the Coleman-Kananaskis highway, 16 miles south of the latter's northern terminus on Highway 1 from Calgary to Banff. At this point, I spotted an unidentified pigeon, perched 30 feet up in a dead birch or poplar tree, some 60 yards away from us. Together we observed it for a short time with seven-power binoculars. After about three minutes, I attempted to make my way closer to the bird through an intervening deadfall, but the bird immediately flew away.

The observed characteristics of this bird were as follows:

1. Size comparable with that of the domestic Rock Dove: approximately 15 inches.
2. Overall coloration dominated by greys.
3. Tail broad and rounded, not pointed.
4. Tail marked with darker grey or black, but details uncertain due to shadow effects of a branch near the tail.
5. A distinct white collar or nape, well displayed because upper part of body was bathed in sunlight with no shadows.
6. Habitat: a forested intermontane valley.
7. Behaviour: perching in a tree, more wary than Rock Dove.

All of these characteristics agree well with descriptions of the Band-tailed Pigeon *(Columba fasciata)*. The coloration, especially dark bands on the tail and the white nape, are pointed out by Peterson (1961, p. 149) as diagnostic of the species. Furthermore, Peterson states that the bird "might be mistaken for Rock Dove except for its woodland or mountain habitat and greater tendency to alight in trees."

This is the second record of the Band-tailed Pigeon from Alberta, and the first one from the mountains of the province. A specimen was secured on July 27, 1967, at Leduc, Alberta, by Mr. Harvey Burns (Halladay, 1968). The status of this species in Alberta is as yet undetermined.

The Band-tailed Pigeon is locally common in southwestern British Columbia, and is confined to that area west of the Cascade Mountains (Brooks and Swarth, 1925; p. 53). It is possible that prevailing westerly winds could facilitate the passage of some birds of this population over the mountains into Alberta.

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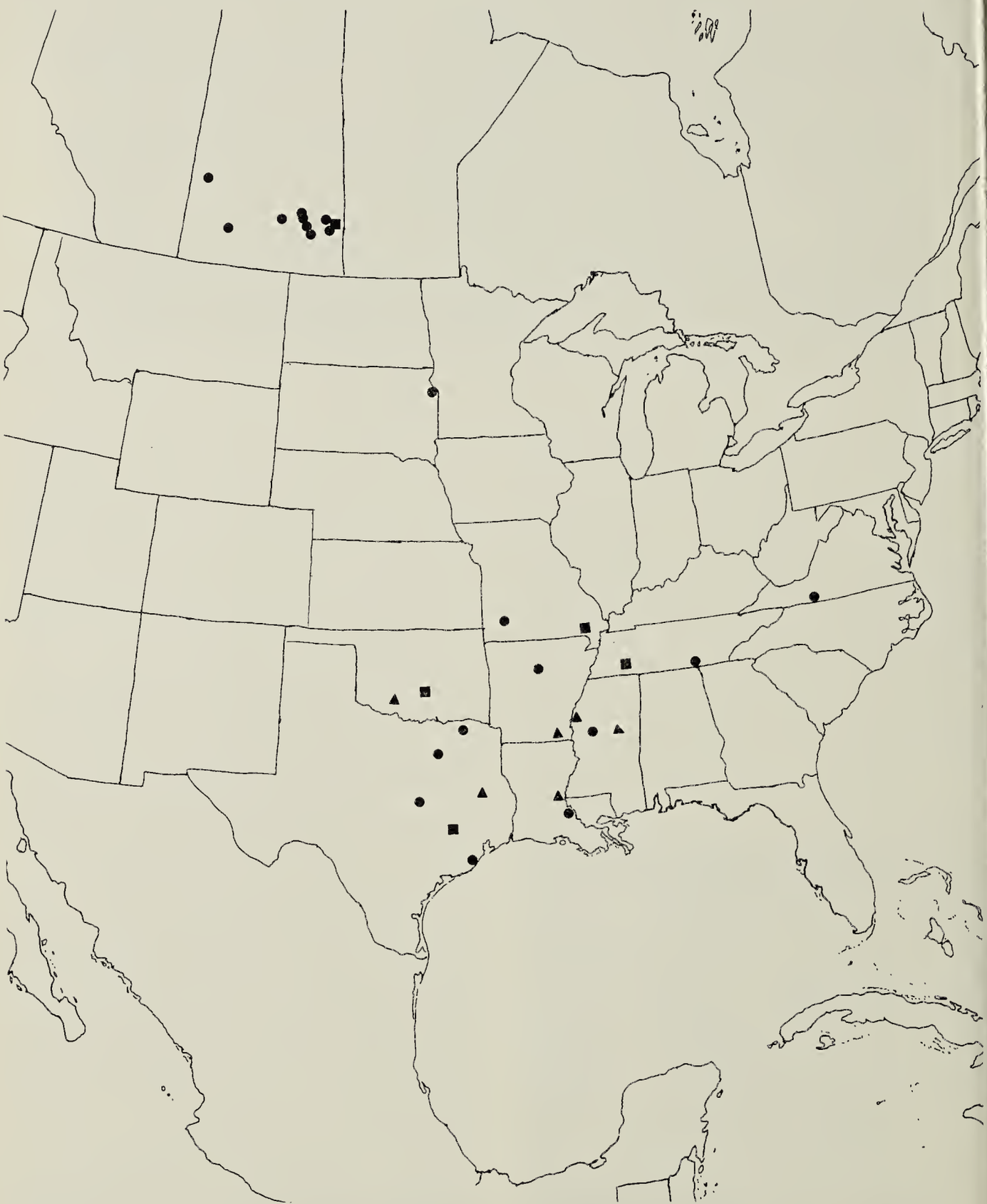
RECOVERIES OF ROBINS BANDED IN SASKATCHEWAN

by **C. Stuart Houston,** 863 University Drive, Saskatoon
(from Files of Canadian Wildlife Service)



Recoveries of Robins banded in Saskatchewan (excluding those recovered at banding locality).

Note: Squares represent direct recoveries (same year). Triangles represent semi-direct recoveries (January 1 - June 30 of following year). Circles represent subsequent years.

Robins banded in Saskatchewan appear to follow the same east-of-south direction taken by many other species, though they seem somewhat more widespread in winter than the grackles mapped in the September, 1968 *Blue Jay*. The exact migration pathway is not well defined since only one recovery occupies the long gap between Saskatchewan and Missouri. Of the 21 recoveries outside Saskatchewan, only four were "direct" (the same year), though another six occurred early the next year before the robins returned north.

The faithfulness of adult robins to their nesting territory is well demonstrated by the many "returns" (caught by the bander another season) and local recoveries in succeeding years, although three years is the longest such interval recorded to date. The writer's observations confirm those of Maurice Street of Nipawin, that the first robin to be seen in the spring may be a banded male reoccupying his territory; those migrating farther north pass through later on. In 1968, the three pairs of robins whose territories bordered on our yard included four banded birds, first caught on April 27 and 29, 1966 and on May 1 and May 2, 1967, returning in 1968 on April 23 and 25 and on April 26 and May 6, respectively.

On the other hand, it is of interest that robins banded as immatures at Indian Head apparently took up territories of their own at Regina Beach, Balcarres, Killaly and Wolseley, up to 60 miles from their birthplace. One of these reached the age of seven years, still over four years short of the published record for this species.

Banded by George Lang, Indian Head, Sask. (503-1034) (1662 banded):

July 12/24. I. Found dead July 26/24 (direct) Kennedy, Sask. (493-1015).
June 8/26. I. Shot, season 1930 (4 yr.) in Arkansas (352-0932).
May 29/27. I. Shot Jan. 10/28 (–1 yr.) Moreauville, La. (310-0915).
June 12/27. U. Shot Jan. 28/28 (–1 yr.) in Mississippi (331-0891).
July 23/27. I. Shot Jan. 23/30 (–3 yr.) Dallas, Texas (324-0964).
June 8/28. I. Found dead mid-April/32 (–4 yr.) Regina Beach, Sask., (504-1045).
July 23/28. I. Captured Feb. 5/30 (–2 yr.) Cruger, Miss. (331-0901).
June 3/31. I. Found dead Nov. 5/34 (3 yr.) in Missouri (372-0934).
June 3/31. I. Shot Dec. 5/31 (direct) Henderson, Tennessee (352-0883).
June 6/31. I. Trapped July 1/34 (3 yrs.) Balcarres, Sask. (504-1033).
June 12/31. I. Captured early June/36 (5 yrs.) Killaly, Sask. (504-1024).
June 13/31. I. Found dead Feb. 19/34 (–3 yrs.) in Texas (310-0972).
June 15/31. I. Found dead June 11/38 (7 yrs.) Wolseley, Sask. (502-1031).
July 4/32. I. Shot late Feb./34 (–2 yrs.) in Tennessee (350-0854).
July 4/32. I. Found dead Oct. 23/32 (direct) Broseley, Mo. (364-0901).
June 14/33. I. Found dead April 27/35 (–2 yrs.) in S. Dak. (450-0964).

Plus the following local recoveries, all the same year: 4 found dead, 3 killed by cat, 2 flew into wires, 1 shot, 1 killed by auto, 1 miscellaneous.

One return (retrapped by bander in another season): 2 yrs. later.

Banded by Reuben Lloyd, Davidson, Sask. (511-1055) (62 banded):
One local recovery: found dead the same year.

Banded by Robert M. Blakeley, north of Canora, Sask. (515-1022):
One local recovery: caught in a trap 3 years later.

Banded by Mrs. F. Wickencamp, Stenen, Sask. (515-1022):
One local recovery: band found same year.

Banded by Thomas A. Harper, Simpson, Sask. (512-1052):
One local recovery: drowned same year.

Banded by R. H. Carter, Jr., Muscow, Sask. (504-1035) (113 banded):
July 28/27. A. Found dead May 17/31 (–4 yrs.) Lipton, Sask. (505-1035).
June 6/28. J. Caught by bird, mid-May/31 (–3 yrs.) Lipton (505-1035).
Return: 1 after 1 year.

Banded by Wotherspoon Bros., Hyas, Sask. (515-1022) (35 banded):
June 5/32. J. Band found Feb. 9/33 (–1 yr.) Wells, Texas (312-0945).
June 6/34. J. Injured Jan. 31/36 (–2 yr.) Hermitage, La. (303-0912).
July 28/42. J. Injured May 6/45 (–3 yr.) Canora, Sask. (513-1022).

Banded by Fred G. Bard, Regina Beach (504-1045):
July 11/36. J. Shot before Feb. 15/37 (–1 yr.) in Mississippi (334-0905).
June 12/38. J. Shot Dec./38 (direct) in Oklahoma (345-0970).
Local recovery at Regina Beach: 1 found dead 2 yrs. later.
Local recovery, banded at Regina: 2 found dead 1 yr. later.

Banded by Arthur Ward, Burnham, Sask. (501-1072):
Aug. 27/44. J. By cat, July 24/46 (2 yr.) Kerrobert, Sask. (515-1090).
July 26/47. J. Found dead before Feb. 1/48 (–1 yr.) in Okla. (343-0982).
July 3/49. A. By dog, Sept. 5/51 (2 yr.) Swift Current (501-1074).
July 12/50. I. Band found Jan. 31/51 (–1 yr.) in Miss. (331-0905).
Plus the following local recoveries: 1 dead same year, 2 by cat after 1 year, 1 dead after 1 year, 1 dead 2 years later.
Returns: 2 after 1 year, 2 after 2 years.

Banded by A. McPherson, Saskatoon, Sask. (520-1064):
June 28/49. A. Shot Feb. 2/51 (–2 yr.) in Texas (290-0952).
Aug. 16/49. J. Shot Dec. 16/49 (direct) in Texas (300-0960).
Aug. 17/49. J. Found dead early Feb./51 (–2 yr.) in Texas (333-0953).
Aug. 27/51. U. Found dead before Jan. 18/53 (–2 yr.) in Virginia (364-0801).
Plus the following local recoveries: 1 diseased same year, 1 found dead 1 year later; 1 injured, 2 dead, 1 tangled in net and 1 band found 2 years later; 1 dead and 1 band found 3 years later.
Returns: 9 after 1 yr., 1 after 3 yrs.

Banded by C. Stuart Houston, Yorkton, Sask. (511-1022) and Saskatoon, Sask. (520-1063) (224 banded):
Only local recoveries: 1 injured and 4 found dead 1 year later.
Returns: 7 at 1 yr. at Yorkton; 3 at 1 yr. and 2 at 2 yrs. at Saskatoon.

Banded by Maurice G. Street, Nipawin, Sask. (532-1040) (291 banded):
Local recoveries: 1 by cat same year; 1 shot, 1 found dead, 1 sick, 1 killed by cat at 1 yr.; 1 killed by cat and 1 found dead at 2 yrs.
Returns: 14 at 1 yr., 8 at 2 yrs. and 3 at 3 yrs.

Banded by Walter and Billy Matthews, Nipawin, Sask. (207 banded):
Local recovery: 1 dead 3 yrs. later.
Returns: 4 at 1 yr., 1 at 2 yrs., 2 at 3 yrs.

Note: 493-1015 means 49° 30′ north and 101° 50′ west.

SASKATCHEWAN BIRD BANDERS*
WILLIAM I. LYON and H. E. McARTHUR

by **C. Stuart Houston,** 863 University Drive, Saskatoon

In 1936 and 1937, William Isaac Lyon visited Saskatchewan, accompanied by his friend and fellow bander, H. E. McArthur, also of Waukegan, Illinois. Their efforts resulted in some 85 interesting recoveries.

In 1936, after banding marsh birds at Delta, Manitoba late in June, they banded Marbled Godwits 25 miles east of Yorkton on July 1. The next day they banded four Marsh Hawks, a Killdeer and two Willets near Indian Head; on July 4 at Last Mountain Lake, 61 Ring-billed Gulls and 52 Common Terns; the next day near Elstow, two more godwits. On July 6 and 8, at Redberry Lake, they banded 151 White Pelicans, 96 Double-crested Cormorants, 292 California Gulls and, reportedly, three Lark Sparrows(?). Following this, they banded Franklin's Gulls and Forster's Terns at Murray Lake near Cochin; totals for Delta and Cochin combined were 1002 Franklin's Gulls and 23 Forster's Terns for the two provinces. Lyon's total of all species for Saskatchewan and Manitoba was 1361 individuals and McArthur's was 546.

In 1937 Lyon and McArthur spent June 30 at Netley Marsh and July 1 at Delta, Manitoba, before reaching Chael Marsh near Henribourg, Saskatchewan, on July 4. There Lyon banded 230 Franklin's Gulls; the next day, 47 more at Waterhen Marsh near Kinistino. On July 6 and 7, Lyon caught one Gadwall and one White-winged Scoter as they flushed from their nests, and banded 157 pelicans, 52 cormorants, 47 Common Terns and 151 California Gulls. On July 8, they were at Lavoy, Alberta and the next day at Mundare and Egg Lake near Morinville, concluding with eight Bank Swallows at Radium, British Columbia, on July 13. Species totals for McArthur are not available, but in 13 days in four Canadian provinces his total was 268 individuals banded, while Lyon banded 1317 individuals.

From his Waukegan aviary, Lyon also carried out some interesting experiments concerning the homing abilities of the Brown-headed Cowbird. In 1937 he shipped 149 male cowbirds, trapped at Waukegan, Illinois, to five Canadian cities — Quebec, Toronto, Winnipeg, Regina and Edmonton. Some of these birds had been used previously in similar experiments within the United States: e.g., a cowbird trapped at Waukegan on April 13, 1937 was released at Denver, Colorado April 28, whence it returned to Waukegan on May 23, 1937, only to be shipped the next day to Quebec City!

Thirty male cowbirds were shipped from Waukegan to Regina, Saskatchewan on May 8, 1937, and released there on May 10 and May 11. One bird, 34-248720, returned to Waukegan the same year, on either May 31, 1937 (the date on the computer printout) or on June 16, 1937 (the date in Ottawa C.W.S. files). The following year, the first to be retrapped was 34-248599 on April 16, 1938, followed by 34-248462 on May 4; both received another free trip and were released in Vancouver, British Columbia on May 12, 1938. From the computer printout it appears that 34-248481 also returned to Waukegan on May 9, 1938, though the banding office in Ottawa has no further information on this bird.

Recoveries from birds banded in Saskatchewan by Lyon and McArthur include 12 California, two Ring-billed and two Franklin's gulls, 30 Double-crested Cormorants and 39 White Pelicans; maps for the latter two species banded at Redberry Lake are illustrated. The recovery rates of about 18 per cent for cormorants and 11 per cent for pelicans are substantially higher than the rates prevailing

* No. 11 in a series of biographies of bird banders.

for the birds banded at the same lake in the past 12 years by this writer.

Lyon's sudden death on June 13, 1938 at the age of 63 prevented a third visit to the Saskatchewan bird colonies. Nevertheless, between 1913 and the end or 1937 he had banded 93,339 birds, many of them on his attractive three-acre grounds in Waukegan. When the Inland Bird Banding Association was formed in 1922, Lyon became its first secretary and two years later he moved up to President, an office he held until his death. Always public-spirited, he was active in Rotary and Boy Scout work particularly. *The Auklet*, published for the 1934 A.O.U. meeting, contains the following rhyme:

"Lyon, big Inland Bird Bander,
Is great, but not like Alexander."

We can safely conclude that he was a "big man" in every respect.

I wish to thank D. A. Benson, Canadian Wildlife Service, for information from the banding files.

Fig. 1. Recoveries of Double-crested Cormorants banded at Redberry Lake by W. L. Lyon and H. E. McArthur. Note: Squares represent direct recoveries (same year). Triangles—January 1 to June 30 of following year. Circles—more than one year old.

Fig. 2. Recoveries of White Pelicans banded at Redberry Lake by W. I. Lyon and H. E. McArthur. Note: Squares represent direct recoveries (same year). Triangles—January 1 to June 30 of following year. Circles—more than one year old.

EIGHTH ANNUAL REPORT OF THE BRANDON JUNIORS' NEST-BOX PROJECT, 1968

by **Brian Cutforth,** Creighton Blvd., Brandon, Manitoba

Our club has continued with great success in the nest-box project. We built up our total to 1850 boxes and hope to make this 2,000 by the end of this year. Two new nest lines were established this year: 62 boxes were set out between Neepawa and Ste. Rose, and 50 were set out between Griswold and a point south of Clariere, Manitoba.

Again this year the Mountain Bluebirds increased wonderfully, while the scarcer Eastern Bluebirds hardly exceeded their 1967 total of first-brood nests.

Vandalism is still the worst problem, and we lost about 20 bluebird broods from this cause. A rare case of a chipmunk invading the nest of an Eastern Bluebird (*Blue Jay*, 26: 145) was noted. We also observed both a Mountain Bluebird female and an Eastern Bluebird female caring for their families with no male bird in evidence.

The following totals for the year 1968 will show how the nest project has built up from the 11 boxes set out in 1959, or from the totals shown in our first report to *Blue Jay* (20:45) for 1961, when no bluebirds were recorded out of 121 nests.

Mountain Bluebird — 242 first-brood nests.
Eastern Bluebird — 60 first-brood nests.
Tree Swallow—an est. 1200 nestings.
House Wrens—an est. 20 nestings.
House Sparrows — a few.

The 12 duck nest-boxes in the Rackham area were not checked this summer.

REPORT ON NEST-BOX SUCCESSES IN THE INDIAN HEAD AREA FOR 1968

by **Lorne Scott,** Indian Head, Saskatchewan

This past spring I put up another 100 birdhouses to bring my total to over 500. Most of the new boxes were placed in an easterly direction along the old No. 1 Highway between Indian Head and Broadview. Mr. John Lane and the Brandon Junior Bird Club of Brandon, Manitoba have extended their houses west to Broadview. Thus we have now completed a bluebird trail from Indian Head, Saskatchewan to Brandon, Manitoba.

The first Mountain Bluebird of the season arrived at Indian Head on March 5, 1968 and was seen by my brothers Glen and Brian near our farm-yard. This is the earliest spring record for this species in the Indian Head area. Previously, the earliest arrival date was March 12, 1966.

Due to the early spring, the Mountain Bluebirds nested about a week earlier than is usual. They had another successful nesting season as there were 51 nests, from which 218 young were fledged. Last year 24 nest boxes were used by bluebirds.

The main cause of nesting failure of bluebirds and Tree Swallows appears to be the destruction of their eggs by House Wrens. At least 12 nests were destroyed this year in this way. House Wrens nested in 43 houses and produced about 230 young. The number of houses occupied by them was about the same as last year (1967) despite the fact that there were 100 additional houses put up. I believe that this is mainly due to the fact that the last 100 houses were placed farther away from trees than the previous houses. House Wrens seldom venture beyond 100 yards from the nearest cover of trees and shrubs.

The number of houses occupied by Tree Swallows has increased greatly

from 70 nests in 1967 to 178 nests in 1968, and over 900 young were fledged this year. Yellow-shafted Flickers took up nesting activities in two houses and raised a total of 10 young, while one pair of Starlings nested and raised five young. House Sparrows used 116 houses for nest sites, most of them being the first ones that I made which are located around our farmyard. I was, at first, pleased to have them nesting because, at that time, I did not know how to attract Mountain Bluebirds and Tree Swallows. In spite of the large number of House Sparrows nesting around the farm, there are very few houses occupied by them in the surrounding fields. Another interesting fact is that the House Sparrow population does not appear to be increasing on our farm.

Vandals took their toll of 21 houses this year. Some were stolen while others were pulled down and left lying on the ground. A few were used as targets for shooting and some were just literally demolished. Stubble fires and cattle destroyed eight of them.

A total of 65 houses have been distributed to various people in Saskatchewan but I have not received reports from them.

After everything is accounted for and totalled up it leaves about 30 houses unoccupied during the 1968 breeding season. Therefore, it has been another successful year for my projects.

I plan on making another 100-150 houses this winter and putting them out in a northeasterly direction to link up with those being set up by the Yorkton Natural History Society thus completing a second bluebird trail.

AN ATTEMPT BY A RUFFED GROUSE TO EAT A MOUSE

by **Robert W. Nero,** Manitoba Museum of Man and Nature, 147 James Avenue, Winnipeg

A dead Ruffed Grouse *(Bonasa umbellus)* with the tail and hind quarters of a large mouse protruding from its gaping bill was found in mid-June, 1967 at Big Whiteshell Lake in eastern Manitoba by Allan G. Watts, Winnipeg. The latter delivered it to Ken Hawkins, a local taxidermist, who shortly thereafter invited us to make a brief examination of the frozen but still intact bird and mouse. The size and position of the mouse, which was lodged in the bird's throat, seemingly could have caused the death of the grouse through suffocation. Further examination recently became possible after the grouse, a healthy-looking adult male, had been skinned in preparation for mounting.

Before attempting to eat the mouse the grouse had foraged on a variety of plants. A small handful of green leaf-tips from its gizzard was comprised of mainly wild strawberry *(Fragaria* sp.*)*, a bramble *(Rubus* sp.*)* and a currant *(Ribes* sp.*)*. Hawkweed *(Crepis ?)*, alumroot *(Heuchera richardsonii)*, and gill-over-the-ground or ground ivy *(Glechoma hederaceae)* were present, along with a number of unidentified species. Two pond snails *(Stagnicola* sp.*)* were also found in the gizzard.

The mouse was an adult male Deer Mouse *(Peromyscus maniculatus)* about four inches long, not including the tail. Judging by its condition the mouse must have been fresh when picked up by the grouse. Damage to its skull could have been caused by the grouse. It was thought that the mouse may have become caught in the throat membrane by a broken bone, but there was nothing to indicate this; evidently it was simply too bulky to swallow. This is supported by the fact that it was difficult to extract from the bird and that its ribs had

been crushed, evidently by the pressure of the throat.

An extensive report on the Ruffed Grouse (Bump, Darrow, Edminster, and Crissey. 1947. *The Ruffed Grouse, life history, propagation, management.* New York State Conservation Dept., New York, 915 pp.) shows that this species eats a great variety of invertebrate animals, including snails (87 in one crop), and small clams and mussels. As expected, they seldom prey on vertebrates. They have, however, eaten reptiles, birds, and mammals. Records include a 17-inch green snake and a slightly smaller garter snake. Bones from a small unidentified bird were found in one grouse and feather remains in another. The only reported mammalian food item, however, was based on the "even more mystifying" appearance of rabbit hairs in two other specimens. The above reference relates such peculiar prey species to "stress of circumstances." The present record is further evidence that Ruffed Grouse may occasionally attempt to take a small mammal, though this may not generally be feasible.

I am indebted to Dr. Jennifer M. Walker for the plant identifications. W. Harvey Beck identified the snail and the mouse.

SLATE-COLORED JUNCO NESTING IN BARN SWALLOW NEST; BROWN-HEADED COWBIRD PARASITISM ON JUNCO AND BARN SWALLOW

by **David R. M. Hatch,** Oak Lake, Manitoba

On June 19, 1968, I observed a pair of Slate-colored Juncos carrying food into an old Barn Swallow nest under the eave of the museum building in the town of Wasagaming in Riding Mountain National Park. Upon examination, the nest was found to contain a nestling Brown-headed Cowbird about six days old, but no young juncos. The nest, which was 13 feet above the ground, was lined with fine grasses and with an inner cup of horsehair. The old inner cup of the Barn Swallow nest was full of grass which could even be seen above the mud edge. Both adult juncos continued to feed the cowbird until June 22, at which time the young cowbird left the nest. I saw a junco on June 26 feeding a cowbird that could fly, and as they were only a little over 100 yards from the nest site assumed that they were the same birds. I have been unable to find a record of a junco nesting in similar circumstances.

Two of three active Barn Swallow nests found on June 19 under the eaves of the same building contained cowbird eggs. One nest held two cowbird eggs and one swallow egg; the other nest contained one cowbird egg and three swallow eggs. On June 24 all of the nests were knocked down by maintenance crews in preparation for sanding and varnishing the wooden building. Although we therefore lack information on the outcome of these particular clutches, it is clear that both pairs of swallows had accepted the foreign eggs and were incubating them during the period of observation. When one considers that there was a wide variation in the period in which the eggs were laid, two or more female cowbirds must have been involved. For example, both sets of eggs were still unhatched June 24, whereas the cowbird that hatched in the junco nest left the nest on its own accord by June 22 and was flying by June 26.

The Barn Swallow is listed by H. C. Friedmann *(Host relations of parasitic cowbirds,* 1963, U.S. Nat'l Mus. Bull. 233*)* as a "a very infrequent victim" and only five specific records

are given. The Slate-colored Junco is "an infrequently reported host; probably it is molested only very slightly by the Brown-headed Cowbird. Eighteen instances have come to my attention." Friedmann goes on to state, however: "In the Peace River District of British Columbia, Cowan found that no fewer than four out of five junco nests which were observed were parasitized, evidence which suggests that in this region the bird is a commoner host than it has been found to be elsewhere." Perhaps the same is true for the Riding Mountain area.

MOCKINGBIRD SEEN AT MARSHALL

by **Gordon Friedrick,** Marshall, Saskatchewan

On July 13 and 14, 1968 we identified a Mockingbird in our yard. I was able to get within 20 feet of the bird on the late afternoon of July 14, and I watched the Mockingbird for about two hours using field glasses most of the time.

The first day we saw the Mockingbird it was quite wary, but it kept coming back to some Manitoba maple and saskatoon bushes around our second house. The Catbirds that nest here every year seemed to keep close to the Mockingbird. I was able to observe the bird feeding and flying at quite close range.

I might add that I found a Black-billed Cuckoo in the spring of 1947, which was identified by A. L. Rand, Acting Chief of the Biological Division, Ottawa, and according to him, this record was one of the most northern records for Saskatchewan.

Editor's Note: Mockingbird records gathered together by Frank Brazier for an article in the *Blue Jay*, 22:63-74 extend the range for this species in Saskatchewan as far north as Prince Albert. The town of Marshall has the same latitude as Prince Albert, but it lies approximately 170 miles to the west, near the Alberta border, in an area where no previous records were reported by Brazier. The continent's farthest north record, according to Brazier (*Blue Jay*, 22:151) was a bird seen May 31, 1955 at Churchill, Manitoba.

ANNOUNCING BENT'S FRINGILLIDS

The last unit of the famous Bent life histories series is now available. Compiled and edited by Oliver L. Austin, Jr., this three volume work contains exhaustive species studies made by both professional and amateur ornithologists, including John Lane of Brandon who compiled the material on the Baird's Sparrow. Order **Life histories of North American cardinals, grosbeaks, buntings, towhees, finches, sparrows, and allies** (1968. Smithsonian Institution, Washington, D.C., Bulletin 237), in three parts for $9.25 (Canadian) from Blue Jay Bookshop, Frank Brazier, Manager, Box 1121, Regina.

CHRISTMAS BIRD COUNT 1968

In your report, list the numbers of each species seen on the ONE BEST DAY between Friday, December 20, 1968 and Wednesday, January 1, 1969 (inclusive). In addition, list other species (number of individuals and date seen) between December 20 and January 1. Send reports as soon as possible to

MRS. MARY HOUSTON,
863 University Drive,
Saskatoon.

SASKATCHEWAN FALCONRY ASSOCIATION RAPTOR BANDING — A SUMMATION

by **Glen A. Fox,** 65 Grange Street, Guelph, Ontario

The purpose of this report is to summarize the results to date of the Saskatchewan Falconry Association's banding program. The banding was carried out from 1960 through 1967 and was somewhat sporadic. The program has since been terminated and the efforts centralized under the supervision of Mr. Richard W. Fyfe, Canadian Wildlife Service, Edmonton. Some data previously published by Houston (1967, 1968) have been included for continuity. Detailed observations on nesting habits of some of the species banded have been published previously by Fox (1964) and Sealy (1967), while others have been filed with the Prairie Nest Records Scheme. Our observations of food remains at the nest do not differ from those of other observers and will not be presented at this time.

In the period 1960 through 1967 the Association banded 267 raptorial birds of 14 species (see Tables 1 and 2). Ten of these banded birds have subsequently been recovered, all within a year of banding.

The owls appear to exhibit little movement from the nest site, and have a heavy mortality within their first six months of life. The Great

Table 1. Summary of S.F.A. Raptor Banding.

Species	Number Banded Yng-Adt.	Number Recovered	Recovery Rate	Brood Size at Banding	Comments
Turkey Vulture	2 - 0	0	0		courtesy of A. Deutscher
Red-tailed Hawk	30 - 0	1	.03	1.5 (1 - 2)	
Swainson's Hawk	7 - 1	0	0	1.5 (1 - 3)	juvenile cannibalism in 3 of 4 nests
Ferruginous Hawk	17 - 0	0	0	3.0 (2 - 3)	
Golden Eagle	6 - 0	1	.16	1.5 (1 - 2)	
Bald Eagle	2 - 0	0	0		courtesy of F. Heidelbauer
Marsh Hawk	50 - 0	2	.04	4.0 (1 - 5)	juvenile cannibalism noted twice
Prairie Falcon	45 - 1	0	0		14 courtesy of J. Campbell
Peregrine Falcon	0 - 2	0	0		entangled in duck bait-traps
Pigeon Hawk	10 - 1	1	.10		
Sparrow Hawk	31 - 0	0	0		of 28 spring migrants, 64% females
Great Horned Owl	42 - 1	4	.09	2.0 (1 - 3)	
Burrowing Owl	9	0	0		
Long-eared Owl	10 - 1	1	.09	3.3 (2 - 5)	
14 Species	261 - 6	10	.37	2.4	Totals and Means

Table 2. Summary of Recoveries to June 30, 1968.

Species	Banded	Recovered	Status
Red-tailed Hawk	11 July '60 Cando	17 Jan. '61 Alabama	–1 found dead
Golden Eagle	3 July '65 Big Muddy	25 Nov. '65 Kansas	D found dead
Marsh Hawk	9 July '60 Battleford 1 July '61 Battleford	1 Sept. '60 New Mexico 22 Jan. '62 Oklahoma	D injured –1 found dead
Pigeon Hawk	5 July '60 Kindersley	6 Feb. '61 Shaunavon	–1 found dead
Great Horned Owl	9 June '60 Battleford 6 June '61 Battleford 11 June '61 Battleford 13 June '67 Dewar Lake	14 Aug. '60 Battleford 28 Dec. '61 Battleford Fall '62 Battleford 19 Mar. '68 Foremost, Alta.	D found dead D shot 1 shot –1 found dead
Long-eared Owl	30 June '60 Battleford	11 July '60 Battleford	D found dead

Key: –1=less than one year of age
D=recovered within same year as banded

Horned Owl banded at Dewar Lake and recovered near Foremost, Alberta, is an exception.

The Red-tailed Hawk, Golden Eagle, and Marsh Hawk all show a southerly migration and all were recovered in the southwestern United States.

The falcons appear to have a lower mortality rate than the other species banded, with only one recovery from the 89 individuals of four species banded.

The mean recovery rate, disregarding the owls, was approximately two per cent and represents recoveries from only four of 10 species banded. Only 20 per cent of the recovered birds were reported as "shot", the bulk being reported as "found dead". Brood size in our sample does not differ markedly from that in the literature, suggesting that our activities had little effect upon the nesting success of the birds involved.

Acknowledgements

I wish to thank Mr. B. Haysom and the other S.F.A. members who took part in the program. Mr. Richard Fyfe gave constant encouragement and Dr. Stuart Houston provided considerable assistance throughout much of the program. Mr. Spencer Sealy and Gary Anweiler, although not club members, were most cooperative and made major contributions. Mr. Harold Fisher assisted with much of the banding in the Battleford area. Mr. Frank Heidelbauer and Adam Deutscher both made valuable contributions. Mr. John Campbell banded Prairie Falcons on the Bow River system in 1966. Finally, I would like to thank the Canadian Wildlife Service and the Wildlife Branch, Department of Natural Resources for issuing the necessary permits and bands.

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R. J. FITCH'S LIST OF SASKATCHEWAN BUTTERFLIES

by **John H. Masters,** Box 7511, Eastern Heights, St. Paul, Minnesota

From 1944 to 1956, Richard J. Fitch of Rivercourse, Saskatchewan, distributed a hand-copied list entitled "List of Arctic Species of Lepidoptera caught by R. J. Fitch at Lloydminster, Saskatchewan, Canada." While only a few of the listed butterflies are truly "arctic species" and many of them were not caught at Lloydminster, the Fitch list represents 35 years of study in Saskatchewan and is an important record. Manitoba has comprehensive Lepidoptera lists by Wallis (1927), Brodie (1929) and Brooks (1942) and Alberta has an exhaustive list by Bowman (1951), but Saskatchewan has no equivalent; thus I feel that it is pertinent to make a permanent record of Fitch's work.

Very little has been ascertained concerning R. J. Fitch. He was born in 1886 in England, the son of Edward A. Fitch who at one time served as president of the British Entomological Society. As a boy, he and his six brothers collected British Lepidoptera and built large collections. Fitch emigrated to Canada as a young man and by 1919 had settled on a grain farm at Rivercourse, near Lloydminster, Saskatchewan. At Rivercourse he resumed his former hobby of collecting butterflies and by 1940 was in contact with many collectors and museums in North America and England. Fitch was extremely active in both exchanging and selling specimens and as a result most large collections in the U.S. and Canada contain at least a few of his specimens. Ehrlich and Ehrlich (1961) figure *Erebia disa, Erebia epipsodea, Oeneis macounii* and *Speyeria mormonia* in their keys from his specimens. Fitch died in the late 1950's, and the disposition of his collection is not known.

Most of the specimens that Fitch sent out were in paper triangles folded from magazine pages, the data on them usually consisting of no more than the species name, "Fitch", the date of capture, and "Lloydminster." To "Lloydminster" many curators have arbitrarily attached either Saskatchewan or Alberta. There is no evidence that Fitch collected to any extent in Alberta, but he did collect some distance away from Lloydminster in Saskatchewan. Probably most of his specimens were captured on the premises of his farm at Rivercourse. However, many were not, as was indicated in a letter he wrote to G. S. Brooks on February 19, 1944: " . . . nevertheless I do a lot of my collecting north of North Saskatchewan River about 50 miles north of Lloydminster where there is a big timber limit and Indian agency . . . Up there I get among the spruce and tamarac — which we don't see this side of the . . . River. I get there *ausonides, Brenthis fraija, frigga, aphirape* and *Chariclea, Oeneis macounii* and *jutta, Erebia disa* and *discoidalis* none of which we ever see here — while up there one never sees *Oeneis varuna* and *alberta* and *Erebia epipsodea* which I get around here." In the late 1940's, Fitch began to assign the locality of "Harlan" to his specimens caught north of the North Saskatchewan River, but presumbably these came from a larger area than Harlan itself—Harlan being 35 miles north of Lloydminster. Only one other collector, P. F. Bruggeman, is known to have studied Lepidoptera in this region.

Lloydminster and Rivercourse are surrounded by parkland and prairie and are best assigned to the Transition Zone. The area is 30 per cent wooded in aspen and willow groves and the remainder is either prairie or planted to grain crops. The rainfall is less than 10 inches and the soil

varies from dark brown loam to sand. North of the North Saskatchewan River the vegetation becomes distinctly more boreal and is best assigned to the Canadian Zone. Aspen, balsam poplar and willow forests are interspersed with black spruce and tamarack bogs. Rainfall is from 10 to 12 inches and black loam or peat soils predominate though there are a few sandy ridges. The principal agricultural crop is oats, but the area is only partially cleared for planting.

In the following list I have altered both the Latin names and the order of presentation to agree with modern taxonomic concepts. When the modern name differs from that originally used by Fitch, the Fitch name is added in parenthesis. All annotations in the list are mine, except when enclosed in quotation marks—in which case they have been taken from Fitch's letters to G. Shirley Brooks or Patrick J. Conway. The original lists contained only names without annotations except for the frequent affixing of offerata prices.

BUTTERFLIES COLLECTED BY R. J. FITCH in WEST CENTRAL SASKATCHEWAN

HESPERIIDAE

1. *Amblyscirtes vialis* Edw.—Roadside Skipper. "Scarce".
2. *Euphyes vestris vestris* Boisd., *(Atrytone ruricola* Boisd.*)*—The Dun Skipper.
3. *Polites coras* (Cr.), *(P. peckius* Kby.*)*—Peck's Skipper.
4. *Polites themistocles* (Latr.), *(P. cernes themistocles)*—The Tawny-edged Skipper.
5. *Polites siris dacotah* (Edw.), *(P. mystic dacotah)* — The Prairie Long Dash.
6. *Hesperia manitoba manitoba* (Scud.), *(H. comma manitoba* & *H. comma assiniboia* Lym.*)*—The Manitoba Skipper. I have not allowed the sympatric occurrence of *H. m. manitoba* and *H. m. assiniboia* to stand; however the two have been found sympatric elsewhere and might possibly represent valid separate species.
7. *Hesperia nevada* (Scud.), *(H. comma nevada)* — The Nevada Skipper.
8. *Oarisma garita* (Reak.) — The Garita Skipper. This western species is quite common in this area.
9. *Carterocephalis palaemon mandan* (Edw.), *(C. palaemon)*—The Arctic Skipper.
10. *Pyrgus communis* (Grt.) — The Checkered Skipper.
11. *Erynnis icelus* (Scud. & Berg.), *(Thanaos icelus)* — The Dreamy Dusky Wing.
12. *Erynnis persius* (Scud.), *(Thanaos persius)*—The Persius Dusky Wing. Fitch sometimes included *Erynnis brizo* (Boisd. & LeC.) and *E. juvenalis* (Fabr.) on his lists. These would be very doubtful as this would be a considerable range extension northwestward and both of them normally feed on oak, which is not present here, in the larval stages.
13. *Thorybes pylades* (Scud.) — The Northern Cloudy Wing. Fitch sometimes recorded *T. bathyllus* Smith on his list along with *pylades*, but this was undoubtedly in error as *bathyllus* is a southern species.
14. *Epargyreus clarus clarus (Cram), (E. tityrus* Fabr.*)*—The Silver-spotted Skipper.

PAPILIONIDAE

15. *Papilio nitra* Edw.—The Nitra Swallowtail. This was a very rare species and Fitch neither sold nor exchanged any examples with other collectors. His *P. nitra* may actually refer to that species or a form like *Papilio kahli* Cherm. & Cherm.

—. *Papilio zelicaon* Lucas—The Anise Butterfly. While *P. zelicaon* was sometimes listed, specimens were not believed to originate in Saskatchewan but rather in British Columbia where Fitch spent his winters during the late '40's and '50's.

16. *Papilio machaon hudsonianus* Clark—The Old World Swallowtail. "*P. machaon hudsonianus*

breeds at Rutland in the sand hills thirty-five miles east of here, although I have never been able to catch one." Fitch also listed *P. machaon dodi* and *P. machaon aliaska*. His *P. m. dodi* probably came from Nordegg, Alberta and were collected by K. Bowman. Certainly *P. m. aliaska* does not occur in Saskatchewan and I have no idea as to what this name might refer.

17. *Papilio glaucus canadensis* R. & J., *(P. turnus canadensis)*—The Tiger Swallowtail.

PIERIDAE

18. *Pieris occidentalis calyce* Edw., *(P. occidentalis* Reak., *P. calyce* and *P. protodice* Boisd. & Lec.)—The Western Checkered White. I am reluctant to retain *P. protodice* on the list although it could occur here along with *P. occidentalis*.

19. *Pieris napi oleracea* Harris—The Northern White.

20. *Pieris rapae* (L.)—The Cabbage Butterfly.

21. *Colias eurytheme eurytheme* Boisd., *(C. eurytheme, C. e. alba, C. ariadne, C. keewaydin, C. e.* form *autumnalis)* — The Orange Sulfur. While Fitch listed the five names as species or subspecies, they all represent infraspecific variants of *Colias eurytheme*.

22. *Colias interior interior* Scud.—The Blueberry Sulfur. *Colias interior* is probably scarce here and possibly found only north of the North Saskatchewan River in wet environments where blueberries grow.

23. *Colias alexandra christina* Edw., *(C. christina)* — The Christina Sulfur.

24. *Colias??, (C. eriphyle* Edw.). *Colias eriphyle* is normally regarded as a subspecies of *C. eurytheme*, but the two do often occur together. Fitch's designation of *eriphyle* might refer to *eriphyle* or it could refer to *Colias philodice* Godart or *Colias palaeno chippewa* Edw.—both of which are possible in the area. Another *Colias* that should be found in the Harlan area is *Colias gigantea mayi* Cherm. & Cherm. which could easily be confused with *C. interior* if only males are captured.

25. *Euchloe ausonides coloradensis* (H. Edw.) or *E. a. mayi* Cherm. & Cherm., *(E. ausonides & E. creusa* Dbdy.—The Large Marble. The differences between subspecies *ausonides* and *mayi* are not especially distinct and a definite assignment to one or the other cannot be made at this time. *Euchloe creusa* should not occur in this area and those considered to be *creusa* by Fitch were probably only small examples of *ausonides*.

—. *Euchloe olympia rosa* (Edw.), *(Anthocaris o. rosa)*—The Olympian Marble. This species appeared on some of Fitch's earlier lists but not on the later ones. While it should occur in Saskatchewan, it has not otherwise been found here and its presence in the Lloydminster area needs to be confirmed.

DANAIDAE

26. *Danaus plexippus plexippus* (L.), *(D. menippe)*—The Monarch.

SATYRIDAE

27. *Lethe eurydice fumosus* (Leussler), *(Enodia eurydice)* — The Eyed Brown.

28. *Coenonympha tullia benjamini* McD., *(C. inornata benjamini)*—The Prairie Ringlet.

29. *Cercyonis pegala ino* (Hall), *(C. alope,* C. *nephele & C. olympus)*—The American Grayling. *Cercyonis pegala* subspeciation is complex and uncertain; specimens from Saskatchewan are best designated as *ino* (type locality at Calgary, Alberta). By applying three names to the "Lloydminster" population, Fitch indicates that they are quite variable in this region—a condition not uncommon for the species.

30. *Oeneis uhleri varuna* (Edw.), *(O. varuna)*—The Prairie Oeneis. A common spring species on virgin prairie.
31. *Oeneis macounii* (Edw.) — Macoun's Arctic. "One of our three scarcest species." *Oeneis macounii* was found only north of the North Saskatchewan River where it was possibly confined to sandy ridges with jack pine (see Masters & Sorensen, 1968). *Macounii* has a biennial cycle and Fitch took it only in odd-numbered years.
32. *Oeneis alberta alberta* Elwes, *(O. daura alberta)* — The Alberta Oeneis. A species that flies on virgin prairie very early in May.
33. *Oeneis jutta ridingiana* Cherm. & Cherm., *(O. jutta)* — The Bog Oeneis. Found only north of the North Saskatchewan River where it is confined to bogs.
34. *Erebia disa mancinus* Dbdy.—The Spruce Erebia. "One of our three scarcest species." Fitch did not collect *Erebia disa* until 1942. It was encountered only on the north side of the North Saskatchewan River and he believed that it was biennial and flew only in even-numbered years — a conclusion that was probably incorrect.
35. *Erebia discoidalis discoidalis* Kby. —The Red-disced Erebia. Fitch was contradictory on this species, sometimes indicating that he found it only in the boreal zone near Harlan and at other times that he found it only south of the River at Rivercourse. It is my guess that it was encountered both places but most commonly in sphagnum bogs north of the river. "*Erebia discoidalis* flies the last two weeks of May only."
36. *Erebia epipsodea freemani* Ehrlich, *(E. epipsodea)*—The Common Erebia. *Erebia epipsodea* flew during June only in the prairie regions.

NYMPHALIDAE

37. *Limenitis arthemis rubrofasciata* (B. & McD.), *(Basilarchia a. rubrofasciata)*—The White Admiral.
38. *Limenitis archippus archippus* (Cr.), *(Basilarchia archippus)*—The Viceroy.
39. *Vanessa atalanta* (L.)—The Red Admiral.
40. *Vanessa virginiensis* (Drury)—Hunter's Butterfly.
41. *Vanessa cardui* (L.)—The Painted Lady.
42. *Nymphalis j-album* (D. & S.), *(Aglais j-album)* — Compton's Tortoise Shell.
43. *Nymphalis californica* (Boisd.), *(Aglais californica)* — The California Tortoise Shell. *Nymphalis californica* swarmed at Rivercourse in September of 1945; it had only been taken once previously.
44. *Nymphalis milberti* (Gdt.), *(Aglais milberti)*—Milbert's Tortoise Shell.
45. *Nymphalis antiopa* (L.) *(Aglais antiopa)*—The Mourning Cloak.
46. *Polygonia satyrus* (Edw.)—The Satyr Angle Wing.
47. *Polygonia faunus* (Edw.) — The Green Comma.
48. *Polygonia progne* (Cr.), *(P. progne* & P. *zephyrus* Edw.)—The Gray Comma. In some lists Fitch indicated both *P. progne* and *P. zephyrus;* I suspect that only *progne* was encountered. *Polygonia progne* is a very variable species and is often confused with *P. zephyrus* or *P. gracilis* in the western part of its range, as was done by Puckering & Post (1960).
49. *Phyciodes tharos* (Dry.), *(P. tharos* & *P. tharos* var. *pascoensis)* —The Pearl Crescent.
50. *Phyciodes batesii* (Rkt.)—Tawny Crescent. This is a northwestward range extension for this species, but there is no reason why it shouldn't be found here.
51. *Phyciodes campestris* (Behr.)—The Western Crescent.

52. *Chlosyne gorgone carlotta* (Boisd. &LeC.), *(Phyciodes ismeria* B. & L.*)*—The Gorgone Crescent.
53. *Boloria salene atrocostalis* (Huard), *(B. myrina* Cr.*)*—The Silver-bordered Fritillary.
54. *Boloria bellona jenistai* Stal. & Turn., *(Brenthis bellona)* — The Meadow Fritillary.
55. *Boloria frigga saga* (Staudinger). —The Saga Fritillary. A species usually associated with willow bogs, *B. frigga* was encountered by Fitch only north of the North Saskatchewan River and regarded as one of the three rarest butterflies in his area.
56. *Boloria freija nabokovi* Stal. & Turn., *(Brenthis freija tarquinius* Curt.*)* — The Freija Fritillary. "If you want to catch *Brenthis freija,* you have to catch them just before Victoria Day (23 May)." *Boloria freija* is another bog species encountered only north of the North Saskatchewan River.
—. *Boloria alberta* (Dbdy.) — The Alberta Fritillary. This species appeared on a couple of Fitch's lists, but not on the later ones—*B. alberta* is highly improbable in Saskatchewan.
57. *Boloria titania grandis* (B. & McD.). *(Brenthis chariclea grandis)*—The Purple Lesser Fritillary. A not uncommon single-brooded species which flies in late July and August rather than early in the year like other members of the genus.
58. *Boloria eunomia dawsoni* (B. & McD.), *(Brenthis aphirape triclaris* Hbr.*)*—The Bog Fritillary. A species restricted to bogs and only found north of the North Saskatchewan River by Fitch. Single-brooded and flying in mid-June.
59. *Speyeria callippe calgariana* (McD.), *(S. nevadensis calgariana)*—The Callippe Fritillary. This was the rarest of the *Speyeria* species encountered in the area.
60. *Speyeria atlantis dennisi* (Gunder), *(Speyeria lais* Edw.)—The Prairie Fritillary.
61. *Speyeria mormonia eurynome* (Edw.), *(S. eurynome)* — The Mountain Silverspot. One of the easternmost localities for this species which was not uncommon on the prairie here.
62. *Speyeria cybele pseudocarpenteri* (Cher. & Cher.) — The Great Spangled Fritillary.
63. *Speyeria aphrodite mayae* (Gunder), *(S. a. manitoba* Cher. & Cher.*)*—The Aphrodite Fritillary.
64. *Euptoieta claudia claudia* (Cr.)—The Variegated Fritillary.

LYCAENIDAE

65. *Incisalia augustinus augustinus* (Westwood), *(Thecla augustinus)* —The Bog Elfin. An early season species that was encountered only in boreal elements north of the North Saskatchewan River.
66. *Incisalia polios* Ck. & W., *(Thecla polios)*—The Hoary Elfin.
67. *Strymon melinus humuli* (Harris), *(S. melinus* Hbr.*)* — The Gray Hairstreak.
68. *Chrysophanus titus titus* (Fbr.), *(Strymon titus)* — The Coral Hairstreak.
69. *Lycaena thoe* (G-M.), *(Heodes thoe)*—The Bronze Copper.
70. *Lycaena xanthoides dione* Scud., *(Heodes dione)*—The Great Copper.
71. *Lycaena helloides* (Boisd.), *(Heodes helloides)*—The Purplish Copper.
72. *Lycaena dorcas dorcas* Kby., *(Heodes dorcas)* — The Dorcas Copper.
73. *Lycaeides argyrognomon scudderii* (Edw.), *(Lycaena scudderii)* —The Northern Blue.
74. *Lycaeides melissa melissa* (Edw.), *(Lycaena melissa)*—The Melissa Blue.
75. *Plebejus saepiolus saepiolus* (Boisd.), *(Lycaena saepiolus)*—The Greenish Blue.
—. *Plebejus acmon* (W. & H.), *(Lycaena acmon)*—The Acmon Blue. Undoubtedly recorded due to a misidentification. *P. acmon* should not reach this far north.

76. *Plebejus aquilo lacustris* Freeman, *(Lycaena aquilo rustica* Edw.)—The Arctic Blue.
77. *Everes amyntula albrighti* Clench, *(Lycaena amyntula)*—The Western Tailed Blue.
78. *Glaucopsyche lygdamus couperi* Grote, *(Lycaena couperi)* — The Silvery Blue. A species flying in late May and June which Fitch only found in the boreal region north of the North Saskatchewan River.
79. *Celastrina argiolus lucia* (Kby.), *(Lycaena lucia)* — The Spring Azure.

I am grateful to Patrick J. Conway of Chicago, Illinois for the loan of his correspondence file with R. J. Fitch and for the loan of specimens in his collection that were collected by Fitch; to L. Paul Grey of Lincoln, Maine for help in the analysis of *Speyeria* species collected by Fitch; and to W. Harvey Beck of the Manitoba Museum of Man and Nature for the loan of the G. Shirley Brooks correspondence file which contains a series of letters with R. J. Fitch.

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AN OBSERVATION OF INTERSPECIFIC BEHAVIOUR IN DRAGONFLIES

by **Victoria Rider,** 824 New Hampshire Ave. N.W., Washington, D.C.

During the summer of 1968 at Emma Lake, Saskatchewan, a male *Aeshna interrupta* dragonfly was seen to exhibit both sexual and aggressive, or predatory, behaviour toward a male *Libellula quadrimaculata* dragonfly. The observation was recorded during the course of a preliminary study of aggressive behaviour in *L. quadrimaculata* in which males of the species were glued live, by the legs, to frequently used perches projecting over shallow water areas. Usually these libellulid "models" were investigated by other male *L. quadrimaculata.* On one occasion, however, a male *Aeshna interrupta* landed on the thorax of the model and appeared, initially, to be attacking it vigorously with its mandibles. It subsequently remained nearly motionless for the next few minutes, still perched on the model's thorax. The aeshnid then began curving its abdomen forward and succeeded in grasping the model anteriorally for a few seconds with its abdominal claspers. This last act strongly resembled normal mating behaviour in dragonflies, where the male's first action is to adopt the "tandem position" with the female.

After several more minutes of perching on the model's thorax the *A. interrupta* flew off. The entire interaction lasted approximately six minutes. Examination of the *L. quadrimaculata* model revealed that a large section of the dorsal side of its thorax and the back of its head had been eaten.

This interaction is significant in two respects. First, it demonstrates the relatively low degree of species-specificity which can characterize interactions between dragonflies. *Aeshna interrupta* is a considerably larger species than *Libellula quadrimaculata,* and the bodies of male aeshnids display brilliant blue and yellow coloring in contrast to the brown coloration of *L. quadrimaculata. A. interrupta* dragonflies spend the vast majority of their active hours on the wing, frequently flying at

Initial contact of a male *Libellula quadrimaculata* "model" by male *Aeshna interrupta.*

Aeshna interrupta attempting to achieve tandem position with *Libellula quadrimaculata.*

heights of four feet or higher. Male *L. quadrimaculata* are territorial, spend an average of 90.5 per cent of their time perching and rarely fly higher than three feet (Connor, 1968). Despite differences in appearance, flight ranges and behaviour, however, there are apparently enough general similarities between the two species to provoke occasional interactions. Miller (1967) has even observed a male *A. interrupta* attempting to couple with a Ruby-throated Hummingbird *(Archilocus colubris)*.

Studies of dragonflies are frequently complicated by the difficulty of resolving behaviour into sexual and aggressive components. In this interaction both sexual and predatory responses by the *Aeshna interrupta* seemed fairly evident. Furthermore, the interaction is consistent with the finding of Pajunen (1962) and others that in a single encounter between two male dragonflies both sexual and aggressive behaviour may be displayed.

On the subject of dragonflies eating other dragonflies Moore (1960) has noted that although the initial response of the attacker may be either aggressive or sexual, once the attacker's mouthparts come in contact with the other individual, the latter may be eaten essentially by accident. At Emma Lake *Aeshna interrupta* were seen to capture and devour *Sympetrum danae* but these dragonflies, most probably because of their small size, were never contacted sexually.

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SHORT-TAILED SHREW AT NIPAWIN

by **L. S. Riome,** Nipawin

April 21, 1968 was a raw windy day. The temperature at noon was 33° above zero, the ice on the Saskatchewan River was still intact, snow was deep in the forest while the north and east river and ravine banks had begun to succumb to the penetrating spring sun and show patches of expectant black earth. On such a leaf-strewn spot an expired Short-tailed Shrew *(Blarina brevicauda manitobensis)* was found. The location was NW 14 - 51 - 14 W2 — which subsequently became known as the "Beaver Dam" area to those who participated in the 1968 Summer Meeting of the Saskatchewan Natural History Society at Nipawin.

The animal appeared to be in perfect condition. No signs of external injury were visible. Whether it died of natural causes or had been killed by an enemy was not known. The general shape was that of a stocky mouse with a tapered snout and a short tail. Its incredibly soft, silky fur gave off a variable grey lustre when stroked in strong light. Two very formidable, black-tipped upper incisors protruded under the flexible, sensitive snout giving a buck-toothed appearance. A profusion of long whiskers curved posteriorly. The ears were concealed and the tiny eyes beady. The feet were pinkish with five slender toes terminated by sharp nails. The tail was tipped with a brush of hairs indicating that the animal was young, for as a shrew ages, the hair is worn off leaving the tip eventually hairless.

The specimen, a female, had the following measurements: body 94 mm; tail 24 mm; total length 118 mm; hind foot 14 mm; weight 18 grams. It is now in the collections of the Saskatchewan Museum of Natural History, Regina.

Dorsal view of Short-tailed Shrew, April 21, 1968

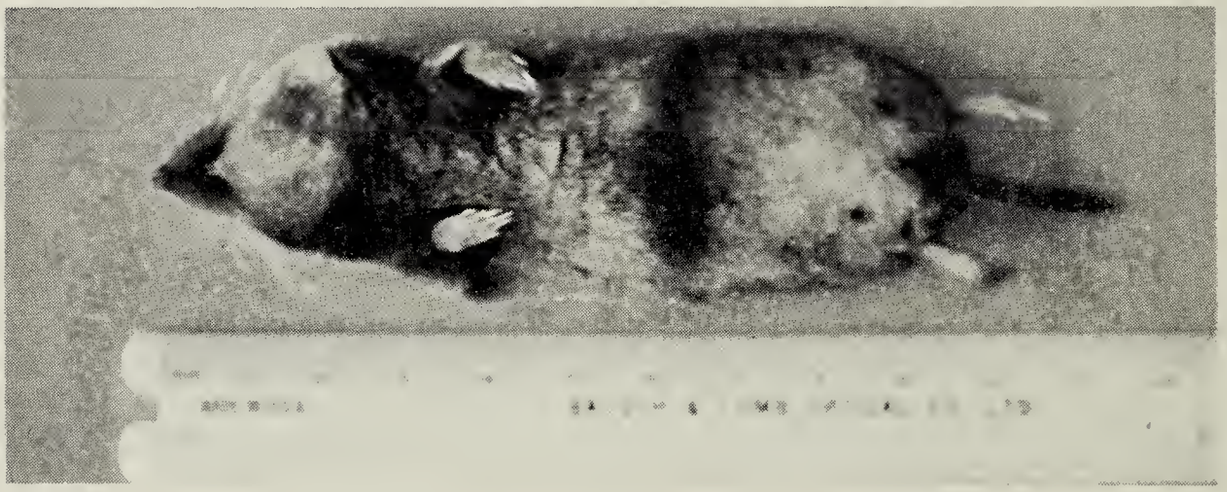

Photo by S. D. Riome

Ventral view of Short-tailed Shrew.

A survey of the literature reveals a limited reporting of this species in Saskatchewan. The distribution map is based on these published records (Beck, 1958; Soper, 1961; *Blue Jay*, 15:221; 17:30; 18:42; 19:55; 26:166) and a specimen from Hazel Cliffe (pers. corres., W. H. Beck). There is also a Manitoba record for Le Pas (Krivda, 1957). The Nipawin record falls in a line between the Keatley and the Le Pas records and is taken as the northern limit of the species shown in the shaded area of the map which represents its probable range. Actual locality records are indicated by dots.

Mr. F. G. Bard, Director of the Saskatchewan Museum of Natural History at Regina or Mr. Harvey Beck, Curator of Mammals at the Manitoba Museum of Nature and Man at Winnipeg, would be pleased to receive specimens within and without the present known range. Such specimens would aid in advancing the knowledge of the species.

The writer is indebted to Mr. W. H. Beck for assuring the accuracy of the report, reviewing the literature and preparing the distribution map.

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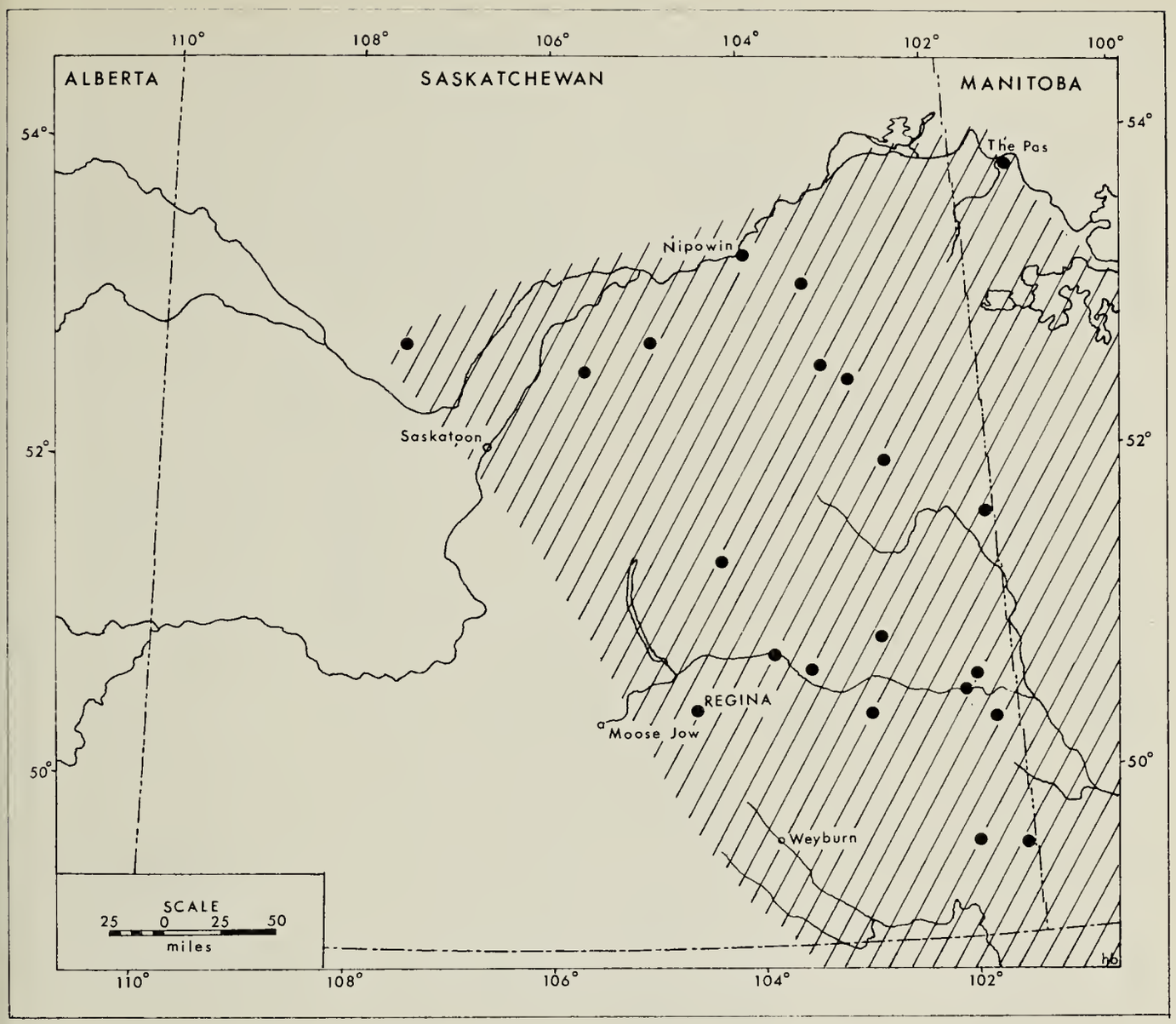


The distribution of the Short-tailed Shrew in Saskatchewan.

THE EXTENSION OF THE WESTERN SMOOTH GREEN SNAKE INTO SOUTH CENTRAL SASKATCHEWAN

by **Dianne M. Secoy,** University of Saskatchewan, Regina

On September 29, 1968, on a field trip to the badlands of Big Muddy Lake, we took a specimen of the Western Smooth Green Snake *(Opheodrys v. vernalis* Harlan). The snake was found in the grass in the bottom of one of the small valleys of the badlands to the south of Big Muddy Lake. At this time a specimen of *Pituophis melanoleucas sayi* was also taken.

The Western Smooth Green Snake has been reported previously only from the Qu'Appelle Valley and the region around North Portal in the southeastern portion of the province. This specimen was taken approximately 100 miles west of the North Portal area and 125 miles southwest of the Qu'Appelle Valley. However, since it was taken in prairie, the westward extension of the range constitutes no change in ecological habitat and may simply reflect a lack of extensive herpetological collecting.

Junior Naturalists

Edited by **Joyce Deutscher,** 7200 6th Ave., Regina

NOTES AND COMMENTS

As a special Christmas bonus to Juniors this issue has a Christmas project by Helene R. White. We hope you have been saving goldenrod galls so you can try some of the projects suggested by Mrs. White. Even if you have not collected any, you still may be able to find them if the snow is not too deep.

Send your illustrations, stories and letters about nature to Mrs. Joyce Deutscher, 7200 6th Ave., Regina. We will be looking forward to hearing from you.

NATURE HOBBIES

by **Helene R. White**

In this issue we are going to tell you how to make use of the goldenrod galls you have been gathering.

We will start with birds. For these you will need some white glue, a darning needle, and a penknife. Select a large gall for the body, cutting off the stems, and a small one for the head. Decide whether you wish a long or short neck and cut that stem accordingly. Punch a hole in the body with the needle, moving it around in a circular fashion until you have a big enough hole to receive the neck, a dab of glue, then the neck in the hole. Flatten the body bottom so it will sit, or hang it up on a mobile or spray it gold and hang on the Christmas tree. If you have trouble getting it to sit just right, glue it to a square of cardboard. You can add wings made from a split and slightly hollowed out gall, glue to body, holding in place with straight pins until dry. Stray feathers should make a dandy tail and wings. Sequins, rhinestones (pried out of old discarded jewellery) or seed beads make bright eyes. Coloured bits cut from an old magazine do admirably also.

Pieces of stems can be used for legs if you want a long-legged bird, halved galls once again are used for feet. You'll likely have trouble making them stand alone at first; don't despair, glue them to a piece of cardboard. Once you start you'll find each gall reminds you of something and you are on your way. We have a fish with whittled tail and fin added. Our penguin is only an inch high, he sits on a gall slice, we added black felt flippers and coat, yellow beak and feet.

For tricks split a gall in half, add a toothpick mast and paper sail and you have a boat. If you want to sail it paint the hull with nail polish or crayon it heavily.

The snowman is made of three galls glued together with stem arms. I punched a hole in the top of his head to receive a piece of pipe cleaner and glue, then dipped him in white paint. A felt "hat", some features, a bend in the pipe cleaner, and he was ready for the Christmas tree. Cotton batting could be used instead of paint.

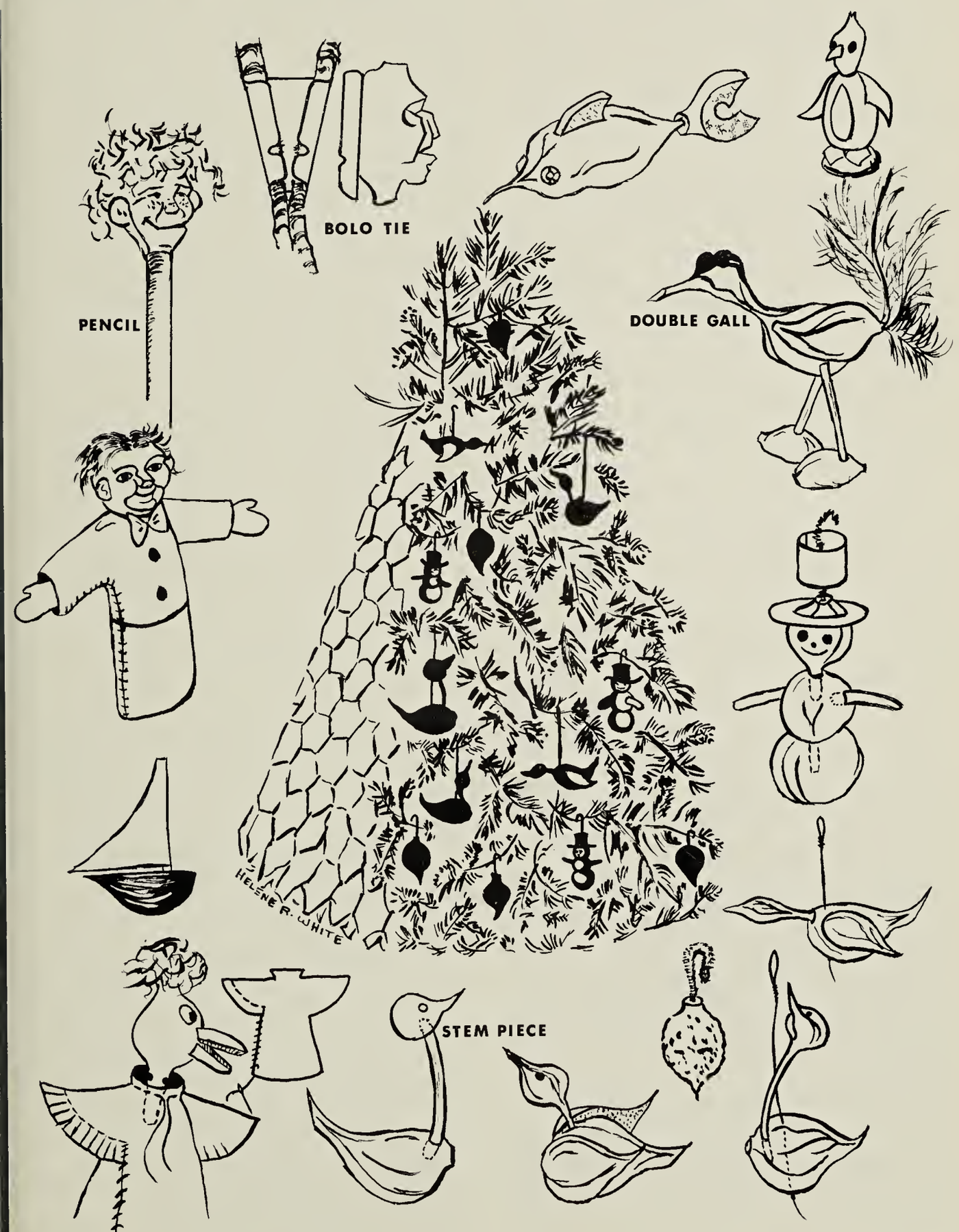
The carved heads take more time but they are fun. The first step is to peel off the shiny hard coating. Then start carving! Keep it simple for the first one. The crow has two hollowed circles for eyes and his beak was carved from separate gall pieces and added to the face like the birds' necks. Once you have a face you like, paint it with water colours, when dry, cover with clear nail polish. Snippets of coloured wool are added for the hair and if you want ears, use gall slices. Your head can now be used on the end of a pencil, or you can flatten the back and glue it to a purchased bolo tie, or glue to a brooch back. These are available and inexpensive at hobby shops. The finished article would make a dandy gift.

A series of animal and bird heads would make a totem pole.

The heads can also be used on finger puppets. For the crow cut two pieces

of felt exactly the same, stitch the sides as shown. Notch the gall at the neck (see illustrations). Using double thread and a running stitch go around the neck of the felt costume, slip in head, and draw garment tight, tie. Cut feather fringe and you have a finger puppet. The little man has a white shirt with black "trousers" added. His hands are pink felt glued into the sleeves, his felt bow tie and buttons are also glued on.

The annual slaughter and defacing of evergreens at Christmas prompted us to purchase an artificial tree, but we still have a live one. Why don't you help conserve our trees and make one like the illustration, for your



table? A 14" cone of chicken wire, with small evergreen twigs tucked in, makes the best little tree imaginable. If you sprayed your birds gold do hang them on your tree; if you want more sparkle, powder them with glitter or make some baubles. Punch a hole in top of a gall, glue in a pipe cleaner hook, paint brightly and dust with glitter while still wet.

Have a happy Christmas, one and all, and since it is His birthday why not light a birthday candle or two to show that you remember Him on this day.

A DAY IN THE WILDERNESS

February 23, 1968 was the day to go out in the wilderness and survive with nature around us. This incident started when Mr. Cleave, our teacher, decided to take the class to Mr. Gilroy's farm for survival practice. After weeks of study and preparation we had learned two of the most important points—suitable footwear and light knapsacks.

Finally we were climbing out of the bus. There were nineteen of us all together in Mr. Cleave's class and we all stood quietly while Mr. Doty split us into groups.

We walked through a field and down into a valley to set up camp on the creek bed.

There were five fires. Each group made something to eat. We started our fire with tinder and kleenex. We soon had a tempting cup of hot broth.

Some groups had hamburgers, others had pancakes, and still others had potatoes. For dessert we had tea.

Meanwhile, Mr. Doty gave us a lesson on axes, how to handle them, and how to make a sheath for them.

Now came clean up time and following that came the tiring walk back to the farm where the bus was waiting.

Mr. Cleave gave us some advice about warming up but in spite of our tingling toes the trip had been most enjoyable.—Class from Public School Outdoor Education program, Regina.

BANDING HORNED OWLS

by **Rosemary Nemeth**, age 12, Yellow Creek

This spring I was fortunate to find three horned owl nests.

On May 11, my teacher and some classmates, accompanied by Dr. Houston and his helper, went to band the owls. There were seven nests in our district. I went to my three nests and two others.

Before we started banding, Dr. Houston showed us what happened when a horned owl flew at him. He had two bandages on his head and his goggles had a hole in them. He warned us never to climb a horned owl tree unless we have helpers on the ground.

In my first nest there were four nestlings. For food they had one baby rabbit, a leg of Mallard duck and one mud hen (coot). There were three little owls in my second nest. We had to lift the owls up to Dr. Houston by an old tree. My third nest had four baby owls. For food they had two baby rabbits, a Franklin's ground squirrel and a big rabbit.

Dr. Houston asked us if we knew what the parent owls feed the baby owls when there's not enough rabbits. He said they feed the littlest owls to the biggest owls. You may wonder what I mean by bigger and smaller owls. The eggs don't hatch at the same time.

I enjoyed this banding trip very much and am looking forward to another one next spring. You can come on a banding trip too if you find a horned owl's nest next spring.

AN UNUSUAL FLOWER AND EXPLORING BLOW OUTS

by **Colette Isinger**, age 10, Saskatoon

In June 1968 Rose Nemeth's father found a patch of Lady's Slippers. He told Rose about his find and she told my dad. So after school we went to see the flowers. They were yellowish in color, and in clusters. It was quite an experience. Dad used his 33mm. camera to take pictures of them.

Dad and I walk over the blown-out fields looking for Indian artifacts. Sometimes we find arrowheads or scrapers. This is one of my hobbies.

OUR BABY ROBINS

by **Joanne Waite**, age 8, Saskatoon

As I was going to school one day last May a lady showed me two baby robins she had found on the ground. She didn't know how to feed them so I took them home. My family and I kept them in a box in the house. We fed worms and hamburger to them. They drank water out of an eye dropper.

When they learned to fly a little we put them outside in the daytime and at night we brought them in. After a while they could fly better and stayed outside all the time. Every day they would be back for food and water. We hoped other robins would feed them but they wouldn't. We watched them learn to feed themselves.

They always stayed together and when they were apart they would call to each other. Each day they came back fewer and fewer times so we knew they were feeding themselves.

Soon they didn't come at all and we couldn't tell them apart from other robins.

FUN AROUND A DALE

by **Tim Keslering**, age 11, Indian Head

This summer we went to a dale where we found deer tracks all around a water hole. In the high grass we found flattened grass where the deer had lain. When we got out we saw two deer running across a field toward the hills.

In the middle of one hill we started looking for cactus.

We went into some bushes, found some empty nests and took them home.

THE WILD GAME FARM

by **Rita Ozimirski**, age 11, Yellow Creek

This summer I went to Edmonton, Alberta. A couple of miles from Edmonton we stopped at the wild game farm. The farm is about a mile each way. There were many wild animals. There were geese, pigeons, and peacocks running between the people. There was a baby elephant that was two times taller than a man.

Hundreds of deer were lying in wild surroundings. Camels were lying around chewing their cuds. Wild lynx and bobcats were in their cages. A few porcupine were sitting on trees in their cages nibbling on popcorn.

My parents and I walked to the end of the tiger cage and the tiger followed along side in his cage. I tried this several times and the tiger walked along every time. These are just a few of the animals I saw.

GEESE NESTING AT YELLOW CREEK

by **Gaylene Mazur**, age 11, Yellow Creek

In the early spring when my brother, sister and I were walking to school we saw two Canada Geese. As we came near they flew up and landed not far away. When we were about 100 yards from them, the male started honking. He was about 29 inches tall. The female was hidden in the grass so I didn't see her. As we came nearer they moved farther up ahead of us. Finally I threw a piece of dirt in front of them. Then they flew up and out of sight.

About ten minutes later we came upon them swimming in a slough. As we came near the male saw us and became very quiet. Then as we came nearer yet the geese flew up and out of sight. They went to make a nest in a big slough about one mile west of our place.

THE ROBIN'S NEST

by **Sharon Hubbs**, age 11, Indian Head

One day while I was out walking I saw a robin's nest with four blue eggs in it. The pale blue eggs were just beginning to hatch. I stayed and watched for a little while. Just then the egg opened and a small wet bird came out. Then I saw the mother come swooping down. I got out of there fast for fear I would alarm her.

After a few days I came back to the nest where the mother was feeding the young ones worms. Their mouths were big so the mother robin could drop the worms right in. It was getting late so I went to the house, because I didn't want to spoil their meal.

MY TRAP LINE

by **Delmer Dutka**, age 13, Yellow Creek

During the last fall and winter I had a trap line. I set snares and traps for squirrels and set traps for weasels and muskrats.

On Saturdays and Sundays I would go to sloughs around Yellow Creek and trap muskrats.

Each week I caught about five muskrats and two squirrels.

I caught 42 muskrats, 11 squirrels and two weasels. One muskrat was 11 inches long and nine inches wide at the bottom and I got $2.40 for it. One weasel I caught was 23½ inches long stretched.

NATURE HIKE

by **Denise Beaulieu**, age 11, Indian Head

One morning when I was at Nipawin we went on a hike. Once when we were crossing a beaver dam there was a hummingbird sitting on top of an old dead tree. The hummingbird was a glorious mixture of bright colours which glistened so much in the morning sun you couldn't tell the colours apart. It sat there for about 15 minutes, hovered in the air for a while, then flew away, but came back again later.

That morning we saw some pitcher plants as well as many other beautiful flowers. The pitcher plants grow in swamps. The leaves, which are shaped liked pitchers, have many red and orange veins going through them. These pitchers have water in them. When insects fly in they are caught by the hairs in the leaf and drown in the water. The plant absorbs them for food.

We even saw some claw marks made by a bear going up a tree. There were a lot of other things we saw that morning. Too many to be mentioned here.

Letters and Notes

REGINA'S WASCANA WATERFOWL PARK

During my recent visit (October 1968) to Regina, I was drawn again to the Wascana marsh having been away from it for more than four years. A flood of wonderful memories of many past explorations of the marsh swept over me. I could sense again the companionship of those with whom I shared these outings and the changing seasons. I had known the marsh in all seasons and shared it with my Regina friends and many visitors of several nations. All of us were deeply imbued with the strategy of having a bit of naturalness of the Northern Great Plains within the bounds of one of the larger cities of western Canada.

All of us agreed that Wascana marsh offered great contrast to the contrivances of man. It also gave us a unity with nature, of which we are an inseparable part. For us, the Regina scene was richer because of the marsh.

During the time I lived in Regina, my husband and I spent many hours not only at the marsh, but in defending it against those forces which would eliminate it or destroy its naturalness and great beauty.

I was deeply moved, during my recent visit, to see that the marsh was still there and that the University, the governments of the City and the Province, and private residents had not imposed upon or unduly invaded the bounds of the marsh as these had been set some five years ago.

I can only hope that all parties will continue to respect the uniqueness of this marsh and not invade it further. My husband and I will always remember Regina because of our friends and the Wascana marsh. — *Dorothy R. Wade*, Northern Illinois University, Dekalb, Illinois.

PROTECTION OF NATURAL WOODLANDS

It may seem unlikely that in the Northwest Territories we will need to worry about the preservation of natural, unspoiled woodlands. The human population is thinly distributed over Canada's vast north and only concentrated in a small number of settlements. Yet those of us who have done considerable travelling in the Northwest Territories and in the northern portions of Alberta, Saskatchewan and Manitoba have noted with dismay the destruction of forest near settlements. Many northern communities such as Fort Rae, Fond-du-lac, Black Lake, and Brochet, appear as ugly scars from the air. In the past I have bitterly complained to Fort Smith's Town Council about the thoughtless cutting of trees in our settlement. When a new house is built, all trees are bulldozed away and no new trees are planted when the house is completed. Trees are cut everywhere for use as fuel. Because of concern over this destruction, a group of Fort Smith citizens drew up a brief and submitted it to the Town Council.

The introduction to the citizens' brief stated the concern over increasing and indiscriminate cutting of trees. The results of such clearing were deplored — the attendant mud, dust and ugliness, with flowers disappearing and birds retreating. For specific listed reasons, the citizens' group therefore asked for a definite area to be set aside for a natural woodland park. The reasons urged were the natural beauty of this northern boreal forest area overlooking the Rapids of the Drowned on the majestic Slave River, its historic interest, its flora and fauna, the appeal that wilderness holds for tourists, and the prevention of erosion.

The proposal was narrowly approved by Council. Since then, and in order to co-operate with Council, the group has reduced the size of the area requested, to exclude a comparatively inaccessible section of the area that is not travelled. The plea is then for the protection of a key area near the settlement which is in danger of destruction by motor-cycles and motor-toboggans. The proposal has been forwarded to the Commissioner of the Northwest Territories, and we hope that administrative problems will be solved and the area set aside within a year.

We have no television in Fort Smith, but we do have other "amenities" of life found in the south, such as lack of concern about natural beauty! However, one interested group of citizens plans to keep a watchful eye on our community.— *Ernie Kuyt,* Fort Smith, N.W.T.

NON-GAME WILDLIFE MANAGEMENT

We learn with great interest of the special wildlife investigations unit which has been established in the Department of Fish and Game of the state of California, the second state in the U.S.A. (Arizona being the first in 1967) to act to study and manage non-game wildlife.

The California unit will be involved with the state's rare and endangered wildlife, including shore and water birds associated with rapidly disappearing bay and estuarine habitats and inland marshes. Among the animals that will receive attention are hawks and owls, furbearers such as the ringtail cat, kit fox and fisher, and such endangered species as the California Condor and the Peregrine Falcon.

Most state wildlife agencies have direct and indirect responsibility for the protection and perpetuation of all wildlife. However, their attention is given largely to game species because sportsmen, through their purchase of licences and by the payment of special excise taxes on hunting and fishing equipment, finance almost entirely the operations of state fish and wildlife agencies.

The California unit will cooperate with conservation organizations, sportsmen's groups, universities and

interested individuals in gathering much-needed information about non-game wildlife and their habitats. From the information, the Department of Fish and Game will begin to develop management plans to help "assure maintenance of all species of wildlife for their intrinsic and ecological values, as well as for their scientific and educational use." Could SASKATCHEWAN follow the example of California and Arizona and be the first province in Canada to undertake study and management of non-game species?—*H. C. Moulding*, Regina.

AUDUBON TOUR TO CHURCHILL

This summer I was privileged to join the Canadian Audubon Society's tour of the Churchill area, under the able leadership of Mrs. Helen Lloyd, of the Department of Botany, University of Manitoba. We flew in from Winnipeg, 25 strong, for 10 days of glorious weather spent in wandering over the rocky outcrops, the tundra, and into the fringes of the boreal forest, which reaches to within a very few miles of Churchill. Equipped with H. W. Scoggan's *Flora of the Churchill area* and our favourite bird guides, we set out to see as many birds as we could, and to learn as much as possible about the tundra itself and the wonderful variety of plant life that it offers. In both we were remarkably successful.

Our first sighting was made from the air as we approached Churchill, where, looking straight down into the water, we could see the shapes of the white whales swimming below. These were to become a familiar sight, as the white whales come up the river with every tide after the shoals of small fish on which they feed, and then out again with the ebb-tide. In the space of a few minutes one could count 40 or 50 going by, rising and falling in graceful arcs, and sitting on the rocks out at Cape Merry on a quiet evening you could hear the soft "whoosh" of released breath as the great creatures surfaced for air.

We saw the exquisitely marked and coloured birds of the north country—the Lapland Longspurs and the Golden Plovers, the Harris' Sparrows, the Water Pipits and the Northern Phalaropes, birds which we had seen before only in migration or not at all, but the greatest thrill of all was the sighting of whole families of Willow Ptarmigan, cock and hen and almost always seven or eight active little brown chicks. All the members were adding up their "lifers"; even the men in the party, enthusiastic and experienced birders all of them, made up to 30 or more. My own count was 33!

The flowers, too, were as beautiful as ever we had read, and the terrain was varied enough that one saw everything from the arctic flora of the great rock outcrops which formed Cape Merry, through the dwarf flowers of the tundra, to the flowers of bog and forest which were to be found no more than 20 miles away. We discovered no less than five varieties of orchids, but the most unforgettable were the white lady slippers and the tiny *Orchis rotundifolia*, an exquisite miniature in mauve and purple, which grew in unbelievable numbers almost everywhere. Others were the spotted saxifrage and the single white chrysanthemums growing in rock crevices (which one could hardly imagine would nourish even moss), the creamy white pyrolas among the scrubby willows and buffalo berries and the eight-petalled dryas turning their faces to the sky like single white roses. Everything grew close to the ground; even the spruce trees at the northern limit were bushy below the snowline, with branches so thickly clustered that you could hardly pass a hand between them, while above grew a thin and scrawny stem, no more than just alive. Along the bleak and inhospitable coast the spruce grew taller, but with the bare trunk turning its back on the ocean, and all the branches streaming inland like wind-blown hair.

Historically, too, the Churchill area was most interesting. At the tip of Cape Merry were the ruins of old Fort Churchill, the old powder magazine, and a cairn to the memory of Jens Munck, one of the earliest explorers to attempt to winter there, and of whose ill-fated expedition only three survived. Directly across the river, which here is over a mile wide, is Fort Prince of Wales, which has been finely restored. It took 40 years to build and was the most up-to-date structure of its kind, but when the French general La Perousse sailed into the Bay it was surrendered without a shot being fired, for a very good reason. Samuel Hearne was caught totally unprepared with only 13 men in the Fort; the rest were all away hunting! Across the river also is Sloop's Cove, where Samuel Hearne's name and the date 1747 are carved on the smooth, glaciated rock.

History is still being made at Churchill, as it is the site of an extensive research station and a rocket range, which, we were told, is operated solely for scientific research and not for any military objectives. One project is the study of the Aurora Borealis. One afternoon we were allowed to watch the launching of a rocket, and afterwards were shown the launching pad and apparatus, then were given a tour of the range, including the telemetry room, where the tracking and recording of data is carried out.

On another interesting excursion we crossed the river in whaling canoes to visit an archeological "dig" where a group of young scientists were excavating the sites of Eskimo dwellings estimated to be 2000 to 2500 years old. They only had to excavate three to four inches, so little debris has occumulated since that time. At the period these were occupied they were only 25 feet above sea level; now the ridge where they are found is 75 above the sea, a rise said to be due to the release from the weight of the Ice Age.

Churchill itself has an extremely interesting Eskimo museum, which in addition to historical artifacts has many fine examples of present-day cultural products, carvings in ivory and soapstone, painting and design, items in fur and hide, etc. There is also a very attractive Anglican church, which has the distinction of being the oldest building in the area.

Altogether it was an unforgettable ten days, and not the least of its pleasure was the good fellowship of a group of active and enthusiastic people joined together in a common interest. — *Mrs. Mary F. Brennan,* Bella Bella, B.C.

WHIP-POOR-WILL OBSERVED

Several bird-watching friends have informed me that an observation I made about 10 years ago is unusual and worth recording. Although many persons have heard Whip-poor-wills calling, apparently few have seen them in the act. Since they call mainly at night there are few opportunities to study them closely. Although it is now several years since I saw this performance, my companions and I have talked about it many times since.

The observation took place at a cabin at Clear Lake in the St. Donat region of Quebec, about 80 miles northwest of Montreal. Although I don't remember the year, it was in the month of June. Whip-poor-wills had been calling all evening, but one seemed to be calling just outside the cabin and out of curiosity I shone a flashlight through a window and found two birds on the ground beside the cabin. One moved off but the other seemed undisturbed by the beam of light and continued to call for several minutes. It was perched on a small knoll and was sideways to me so my three companions and I had a fairly good view.

When first seen it was calling loudly and repeatedly but it shortly ran out of steam and then subsided with a visible lowering of its head as if exhausted. After a moment it perked up a bit and began a most remarkable

behaviour, apparently sucking air into its air sacs (which my ornithologist friends tell me birds have) in preparation for another series of calls. At any rate, we heard a distinct inhalation sound, as if a bellows were being inflated with the air being held by a check-valve. It did this 15 or 20 times, each time giving a slight movement of its head. Although we were unable to detect any increase in body size it seemed to us that this should have been the case. The bird then commenced calling in the usual way and again, after a long series of calls, we saw it slow its tempo and droop as if exhausted. We watched it go through the pumping and inhalation performance a second time before we withdrew. — *George B. Rutherford*, 7448 Kingsley Road, Apt. 501, Montreal 29, Quebec.

SOME UNUSUAL NESTING RECORDS

In three instances during the 1968 breeding season I found House Sparrows nesting in an abandoned Black-billed Magpie nest. The House Sparrow nests were of the ordinary type: generally oval in shape and made of straw and feathers; the nests of the magpies were one year old. In magpie nests that are only a year old, the roofs have collapsed sufficiently to leave the former inner nest room much smaller in size. Thus the sparrow would have a smaller space to fill up with straw and such material in order to make its regular inner nest of thick feather lining. Sparrows would have little luck in attempting to construct a nest in any magpie nest over two years old as in most cases the roof has collapsed completely, leaving no room whatsoever in which to build a nest.

In most instances, single House Sparrow nests were found, but in one case last year I discovered three nests in one magpie nest, not at all unlike the social weaver bird of Africa. However, such situations seem rare and a general rule is no more than one nest, or two at the most, per location, although they can and do live in close quarters.

I was surprised to find, on May 18, 1968, the nest of a Common Crow built on top of an old magpie nest. The magpie nest was no more than two years old, the mud bowl of the interior being still in good shape and clearly visible.

Several times in 1967 I found cases of dual-nesting in the House Sparrow. The Valley Centre dance hall located north of Rosetown provides excellent nesting sites under the rows of eaves. Nooks have been formed by the 2 by 4's placed every 15 or so inches apart, providing nesting situations for over 50 nesting pairs. The cleverly constructed duplex-style sparrow nests were built as one unit and thus both pairs of nesting birds must have laboured together or side by side in order to complete their dwellings. Why they went together to construct such a nest is beyond me, as it was certainly not a result of a lack of nest sites. The nesting possibilities in the hall alone are always very numerous. I strongly suspect polygamy as the only other explanation, but this is by no means an established fact.

Robins also nest in many different sites, but one of the strangest Robin nests I have found was supported by an old bed spring nailed vertically over the window of a shed. The nest was a rather bulky structure supported largely by the spring and to some extent by the board holding the spring against the window. A further oddity was the fact that the nest was constructed entirely of grass and similar plant fibres, no mud having been used. This could not be attributed to a shortage of mud, as our nearby garden always provides a good supply. Perhaps it was a good thing that mud was not used because the extra weight could easily have brought the entire nest toppling down, as it was in a rather precarious location.

On May 4, 1968 I began keeping records of a nest of the House Sparrow; on May 9, 1 was startled to find in the nest a House Sparrow egg and a Starling egg. On that side of the building I checked and recorded several sparrow nests and one Starling nest. The latter nest was located about 20 feet from the sparrow nest, that is, 11 eave sections away, each of these eave sections being capable of housing a nest. My records show that the Starling nest already contained five eggs when that of the sparrow held only one egg—its own. Whether the female Starling entered the nest by accident (which I doubt), purposely dropped it there, or whether it was, in fact, the female of this nest, I do not know, but I have no knowledge of any previous record of Starling eggs having been found in the nest of the House Sparrow or any other bird. — *Wayne Renaud,* Rosetown.

UNUSUALLY LARGE SONG SPARROW CLUTCH

The Song Sparrow is a common resident in Riding Mountain National Park. I found three nests there in 1968 on the ground in dense vegetation. One of these nests, found on June 17 at the base of a clump of nettles *(Urtica* sp.) a mile southwest of the Wasagaming boat cove on Clear Lake, contained eight eggs of this species. The nest was visited three times during the following day; on each occasion the female flushed from the nest, hence she must have been incubating this unusually large clutch of eggs. Unfortunately, I was unable to visit the nest again after June 18.

Margaret M. Nice *(Studies in the life history of the Song Sparrow,* 1937, Dover ed., 1964: 108-109) states: "Song Sparrow nests contain four eggs in about 50 per cent of the cases, five eggs in about 30 - 35 per cent, and three eggs in about 15 - 20 per cent . . . Sometimes there are only one or two eggs, when Cowbird eggs are present. Once I found six eggs . . . . As to the six egg set, I believe this was in the nature of a combination of the second and third set, somewhat as with a young bird the fourth egg that normally goes with the first set sometimes appears in the second."— *David R. M. Hatch,* Oak Lake, Manitoba.

SECOND RECORD OF MOURNING DOVE AT ISLAND LAKE, MANITOBA

On September 27, 1968, Louis Harper and Marius Harper, two of the students in our Junior High, drew my attention to a strange bird on the school grounds. It was easily identified as a Mourning Dove as it was in full view in good light for 10 minutes. The following day the bird was sighted by Roscoe Beardy and Morris Harper. A probable Mourning Dove was sighted earlier at Island Lake by the author in the period between September 24 and October 3, 1965. The light was not good on that occasion, and being a novice at the time, I recorded only that I had seen a "pigeon-like bird with a long tail."

According to Earl Godfrey (1966. *The Birds of Canada*:208) the Mourning Dove breeds in "southern Manitoba (Garland, Shoal Lake, Aweme, Hillside Beach)" but Godfrey also notes that the Mourning Dove wanders widely outside the breeding range, especially in autumn. Ron Penner says it is fairly common at Cross Lake, and Ken and Alex Paupanekis of Norway House are both familiar with the bird.—*A. E. Wilson,* Island Lake.

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We have large quantities of some back copies of the *Blue Jay.* These may be used to complete your set or to help you get new members for the society. In other cases we have no back copies and you may be able to supply rare copies. If you can help please write to Gary Seib, *Blue Jay* archives, Box 1121, Regina.

A CRANE VISITOR

On Saturday, October 12, a lone Sandhill Crane appeared in our garden some 30 yards from the house. It flew to the dugout, about 300 yards southwest, but returned walking. It flew over a shelterbelt and alighted in the pasture east of the house where my twin grandchildren and I followed it to get a closer look. To our great surprise is allowed us to "herd" it for a quarter of a mile, at times approaching to within 25 or 30 yards of it. It was not lame and could fly beautifully, which it did for a few yards when we crowded it.

It returned again Sunday flying to the dugout and walking back to the pasture.

Monday noon my wife heard it calling so we went out to investigate and found it circling high overhead. It drifted away to the southeast and I afterwards heard that it was seen by neighbours some three miles away. About 2:30 p.m. it came flying through the yard so I phoned my brother, a camera enthusiast. In the car we were able to get within 30 feet and were able to get several good shots of it.

The crane should be taking off for the south soon for it cannot survive the winter here and too many people would be only too glad to shoot it, but when it leaves we shall certainly miss it.

I missed it for a couple of days but it came into the yard this morning (Sunday, October 20). It shows no alarm but just does not want to be pressed. A moving picture camera would have done better justice to it, especially its take-off. It slowly "cranes" its neck then starts running, taking slow but tremendously long steps until it becomes air-borne.—*Guy C. Coates*, Leask, Saskatchewan.

UNUSUAL — UNUSUAL

Unusual may be an odd form of title but the items I am about to relate are rather unusual under any circumstances.

On a Saturday in August this yea my wife and I went to visit one o the old retired pioneer naturalists o this magazine: Mrs. M. Hermansky and her brother, Mr. Theo Martinovsky, who live on the banks of the beautiful Cutarm creek just west o the town of Gerald. While walkin through their garden we chanced t see an albino chipmunk, rather tame to say the least. There was only a very faint trace of fawn to indicate the chipmunk streaks. You can rest assured that the four of us had him cornered fairly close for observation, but we had no camera.

On departure we ran into another unusual creature near our parked car, a red-bellied snake *Storeria occipitomaculata occipitamaculata*. F. R. Cook in the Museum's popular series No. 13, *Amphibians and reptiles of Saskatchewan*, states that there is no other Saskatchewan snake that has a red underside, and that it is the smallest. This one was about eight inches long. The *Resource Reader* notes that it grows to about 10 inches. Unfortunately people are often prejudiced against snakes, and we had quite a time to protect this small inoffensive, defenceless little creature from destruction.—*Anthony J. Hruska*, Gerald, Sask.

THE DEER MOUSE AS A NEST COMPETITOR AND POSSIBLE PREDATOR OF THE MOUNTAIN BLUEBIRD

by **Jon E. Swenson**, Shepherd, Montana

As Power (1966:351) has stated, many observers believe that the Mountain Bluebird population is declining in much of its range. Although the following observations neither support nor refute this belief, they do suggest a phenomenon that may on occasion cause a temporary and localized decline in the bluebird population.

For two years records were kept on the Mountain Bluebirds nesting in 16 nest boxes erected in the ponderosa pine covered foothills of the Bull

Mountains near Shepherd, approximately 23 miles WNW of Billings, Yellowstone County, Montana.

In 1968, the first possible case of predation by the Deer Mouse *(Peromyscus maniculatus)* was observed on the study area. Nest box 11 contained four newly hatched bluebirds and one infertile egg on May 31. The nest was empty on June 8 and contained five young Deer Mice when the nest was checked again on June 18. Nest box 3 contained five eggs on May 8 and 12. On May 31 a nest was built over the original nest, which was empty. On June 8, five more eggs were found. Six eggs remained in the nest until July 2. A mouse nest was built in it between July 22 and September 15. This nest may have been abandoned before the mice arrived. The third case of suspected harassment which may have led to abandonment was found in box 2. A successful first brood of five young was fledged. Then later, four eggs were found on July 2. Two cold eggs were in the nest on July 22, one of which was broken. These eggs should have hatched before July 22, if the nest had not been abandoned. A mouse nest was also found in this box on September 15.

Deer Mice have been suspected of usurping the active nests of other birds. Berger (1968) suspected them of destroying active nests of American Goldfinches. Deer Mice were suspected of eating three eggs and six young of Horned Larks in a study conducted by Verbeek (1967). Van Tyne and Berger (1959:282) state that *Peromyscus* spp. often reappropriate bird nests and it is likely that they eat the eggs in active nests before they remodel the nests.

In Power's (op. cit.) three year study of the Mountain Bluebird near Calvert, Montana, he found only one case of a Deer Mouse occupying a nest box. This box was unoccupied by bluebirds at the time. In 1966 in southwestern Manitoba, Deer Mice (rather than "White-footed Mice" as reported) were found using 12 bluebird nest boxes out of 1200 boxes that had been checked (Miller, 1966), but nothing was said regarding the relationship between the mice and bluebirds that may have used the boxes. Both Mountain and Eastern bluebirds were involved.

Seven (44 per cent) of the 16 nest boxes in my study contained mouse nests on September 15, although they were apparently appropriated after the young birds had fledged, with the possible exception of the three cases mentioned. Only one of the mouse nests was built in a box that had not been used by bluebirds. If Deer Mice were responsible for three nests being abandoned in this study, they could be classed as serious nest competitors in this area at least. A combination of a high Deer Mouse population and a shortage of suitable nesting sites for Mountain Bluebirds could certainly have a detrimental effect on the nesting success of the species, even if only for a limited time and in a localized area.

The Deer Mice were identified from a specimen taken from box 10 and from the sighting in box 11.

Miller's (1968) observations of predation on the Eastern Bluebird by an Eastern Chipmunk *(Tamias striatus)* prompted this report.

I am grateful to Don C. MacDonald and Helen Carlson for encouragement and for helping me with field observations, to Louis M. Moos for providing suggestions and invaluable assistance, and to Dr. Clifford V. Davis for suggestions and for critically reviewing the manuscript.

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SASKATCHEWAN NATURAL HISTORY SOCIETY

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INCOME			
Memberships (including sales of Blue Jay)			$ 5,592.83
Spec. Pub. no. 1 — Guide to Sask. Mammals		$ 71.32	
Spec. Pub. no. 2 — Birds of the Sask. River		71.49	
Spec. Pub. no. 3 — Birds of Regina		35.85	
Spec. Pub. no. 4 — Blue Jay Index		19.70	
Spec. Pub. no. 5 — Birds of Lake Athabasca		57.92	
Spec. Pub. no. 6 — Birds of northeastern Sask.		291.90	
Publication — Birds of the Elbow		6.22	
		554.40	
Sales of other merchandise	$ 5,015.72		
Less cost of sales	3,482.16	1,533.56	
Donations (general)		209.70	
Annual Meeting (net)		57.77	
Summer Meeting (net)		171.99	
Interest (bank account and bonds)		278.32	
Miscellaneous (includes advertising $20.15)		32.85	2,838.59
			$ 8,431.42
EXPENSE			
Printing of Blue Jay (4 issues)		$ 5,185.44	
Printing of Birds of northeastern Sask.	$ 1,476.85		
Less grant Institute N. Studies	700.00	776.85	
Printing and postage re: Newsletter		537.34	
Honoraria		1,070.84	
Postage		518.46	
Office supplies and stationery		392.51	
Office rental and light (3 months)		120.11	
Bank charges less U.S. premium		69.17	
Advertising and promotion		52.14	
Miscellaneous office and admin. expense		59.09	8,781.95
EXCESS OF EXPENSE OVER INCOME			$ 350.53

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ASSETS				
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Cash in bank (current)				2,755.58
Cash in bank (savings)				4,507.93
Government of Canada bonds				300.00
Stock on hand				713.61
Accounts receivable				337.78
Deposits with Postal Dept. and Sask. Power				60.00
Publication subsidy re: Hours and the birds			9,000.00	
Less: Centennial Grant	$ 5,000.00			
Less 200 copies to Cent. Corp.	1,500.00	3,500.00		
Sale of paintings		1,060.00		
Royalty to June 30, 1968		1,018.65		
Profit on copies sold		688.72	6,267.37	2,732.63
				$11,447.53
LIABILITIES				
Trust Fund (re: Refuge and Sanctuary)			$ 1,496.65	
Trust Fund (re Yorkton Natural History Society)			130.66	
Owing re: Honoraria			861.38	2,488.69
NET WORTH				
Balance as at Sept. 30/67	$ 9,602.67			
Adj. re. honoraria 1966-67	293.30	9,309.37		
Decrease for year ending Sept. 30/68		350.53		8,958.84
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